

Railway Age

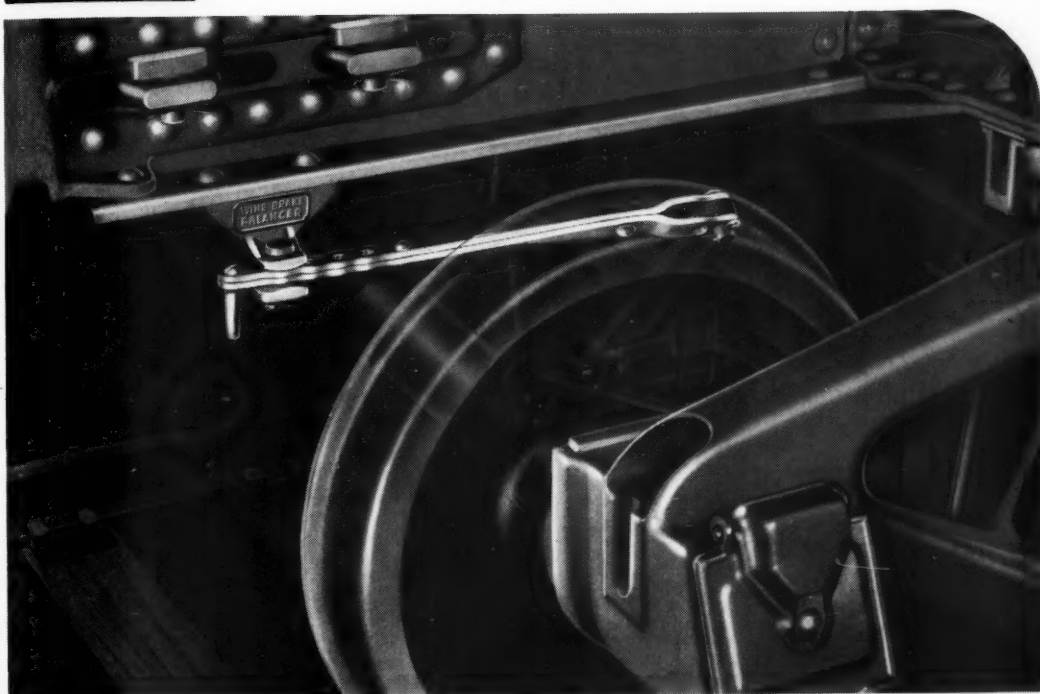
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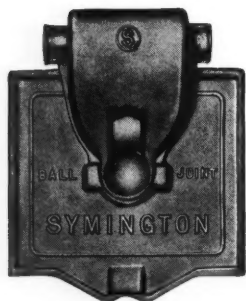
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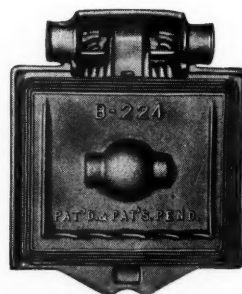
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Have We Become A Decadent Nation?

For more than a third of a century the leading writers, public men and military men of Germany have been asserting that the peoples of various countries, especially France, Great Britain and the United States, have become decadent and are becoming more so. They asserted and believed this before Great War No. 1; and they asserted and believed it again before Great War No. 2. Hitler always has claimed that Germany was not actually defeated in the first Great War, but was betrayed by an incompetent leadership; and certainly Germany has been amazingly successful in the second Great War under Hitler's leadership. Has Hitler's success in overrunning and conquering nine countries, including France, within a few years vindicated the prevalent German view that these nations had become decadent? If Great Britain falls a victim to him, will this show that the British had become decadent? Have the people of the United States become decadent to an extent which, after Hitler has mastered Great Britain, would make it possible for him to master this country?

Does U. S. Deserve the Dictators' Contempt?

There can be introduced some very strong evidence that the people of the United States are becoming decadent, if they have not already become so. Some of this evidence is afforded by the pessimism, defeatism, cowardice and economic stagnation that have prevailed in this country during the last decade.

We had the New Era under Coolidge and Hoover as we have had the New Deal under Roosevelt. Pertinent facts usually disregarded are that both the New Era and the New Deal were preceded by severe slumps in business, and that the slump in 1921 was quite as severe as the one in 1930. The slump in 1921 was started by a terrific decline of commodity prices, while that in 1930 was started by a terrific decline of stock market prices. Freight car loadings declined about 13 per cent in both 1921 and 1930, showing that the declines of physical production and commerce in the two years were about the same; but, because of the greater decline in commodity prices in 1921, the decline in the national income in that year was almost 12 billion dollars as compared with only a little over 7 billion in 1930. The business slump in 1921, however, was

speedily followed by a long period of prosperity, while that in 1930 continued to grow worse until it developed into the most profound and protracted depression in the history of this or any other leading industrial country.

Governmental Paternalism Began Under G. O. P.

What caused this extreme difference in the developments following the slumps in 1921 and in 1930? Well, there are certain facts of history that are incontrovertible. In 1921 and 1922 governmental paternalism did not interfere to prevent the economic injuries and readjustments that always previously had occurred following such a slump of business. On the other hand, immediately following the stock market crash in the fall of 1929 government began paternalistically interfering as never before to protect all of us from the natural results of our follies. President Hoover called business leaders into conferences at Washington and asked them to avoid such curtailments of capital expenditures and reductions of wages as were actually made in 1921-1922 and in every previous period of declining business.

The United States, as a result of the war, had become the world's greatest creditor nation, and consequently it had become necessary for it to increase its imports in order to maintain its exports; and yet in 1930 Congress passed the McCumber-Fordney tariff bill to increase the "protection" of American industries, many of which were already too well protected for the nation's good. The government having paternalistically interfered to prevent reductions of wages and other costs on the railroads and in other industries, and thereby increased their danger of bankruptcy, President Hoover took the unprecedented step of initiating the creation of the Reconstruction Finance Corporation for the purpose of lending government money to prevent bankruptcies—more governmental paternalism.

However much it may or may not have been due to this unprecedented paternalistic government interference, it is a fact, that unlike the slump which began in 1921, that which began in 1930 continued and grew worse until the late summer of 1932. Real recovery then began, and, excepting for its interruption by the banking crisis in the first quarter of 1933, continued

until the middle of 1933. In May, June and July, 1933, railroad freight car loadings were 16 per cent greater than in 1932, and in July were 29 per cent greater. But by this time the American people had begun to assume an attitude different from any they had ever assumed before; and they have maintained it ever since, or at least until very recently. This was an attitude of defeatism which under bad leadership has caused them ever since to disregard the entire previous economic history of their country and the teachings of all economists of reputation throughout the preceding century.

NRA a Symptom of National Defeatism

The most striking illustration and evidence of this was the passage in May, 1933, of the National Industrial Recovery Act and its subsequent administration and wide acceptance. This act had three purposes—first, to authorize companies in naturally competitive industries to quit competing and advance prices; second, to require collective bargaining in labor disputes, reduce working hours and advance wages; and third, to provide for government policing and enforcement of the so-called “codes of fair competition.” It amounted, in effect, to the establishment of the “corporative” state as it had been established already by Mussolini in Italy and was just being established by Hitler in Germany. In addition, it provided for vast government spending for relief and to “prime the pump” of business.

What did all this mean? It meant an increase of governmental paternalism and control many times as great as had ever previously been even proposed in this country. Why was it all so generally accepted by politicians, labor leaders and business men—by radicals and conservatives alike? Because most of them had become scared out of their wits—had lost faith in the system of free competitive enterprise, and decided that business could not save itself and must be saved by a paternal government. And this, although the record shows that at that very time recovery was already well started in spite of all the previous government meddling and muddling for more than three years!

There were a few people in the country even in May, 1933, who opposed NRA and other New Deal policies, contending they were un-American, economically unsound and would hinder or prevent recovery. People are usually divided into liberals and conservatives. This classification does not now apply in the United States, if it ever did. The people of this country divide into radicals, liberals and reactionaries. Both radicals and reactionaries always want more government—radicals to help the “masses”; reactionaries to help themselves—such help as protective tariffs, subsidies, unequal regulation, etc. Only liberals always want less government—their fundamental principle being, as Thomas Jefferson said: “That government governs best which governs least.” It was only a handful of true liberals who saw in 1933 that what was wrong with NRA and other New Deal policies then being adopted was that they provided far too much paternalistic government

interference with private economic activities, and consequently would interfere with or prevent recovery.

People Now Beginning to Understand and Have Faith in, Private Enterprise

The number of persons seeing this has been increasing ever since; and there are millions today—perhaps a majority of voters—who realize that the best, and, in fact, only means of making possible (1) adequate expenditures for national defense and (2) maintenance of a high standard of living for the American people is the most rapid and fullest practicable restoration of the system of free private enterprise. But there are still many, including some who consider themselves sincere believers in private enterprise, who are very skeptical and fearful about the ability of private enterprise, with its freedom restored, to produce enough for all civil and military needs without being supplemented by large government expenditures on public works and for relief.

On what are these doubts and fears based? Certainly not upon the history of the United States. There appears herewith a table with the general heading “National Income in the United States, 1799-1939.” Under this general heading there appear two subheadings, “Realized National Income” and “Private Production

National Income in the United States—1799-1939

| Year | Realized Total National Income | | Private Production Income | |
|----------------------------------|--------------------------------|------------|---------------------------|------------|
| | Total (millions) | Per Capita | Total (millions) | Per Capita |
| 1799 | \$677 | \$131 | \$668 | \$129 |
| 1809 | 915 | 130 | 901 | 128 |
| 1819 | 876 | 93 | 855 | 91 |
| 1829 | 975 | 78 | 947 | 75 |
| 1839 | 1,631 | 98 | 1,577 | 95 |
| 1849 | 2,420 | 107 | 2,326 | 103 |
| 1859 | 4,311 | 140 | 4,098 | 134 |
| 1869 | 6,827 | 180 | 6,288 | 166 |
| 1879 | 7,227 | 147 | 6,617 | 135 |
| 1889 | 10,701 | 173 | 9,578 | 155 |
| 1899 | 15,364 | 205 | 13,836 | 185 |
| Annual average five years ending | | | | |
| 1904 | 18,291 | 230 | 16,508 | 208 |
| 1909 | 23,782 | 272 | 21,513 | 246 |
| 1914 | 29,671 | 312 | 26,772 | 281 |
| 1919 | 47,510 | 463 | 42,244 | 412 |
| 1924 | 62,992 | 573 | 54,837 | 499 |
| 1929 | 74,588 | 631 | 64,655 | 547 |
| 1934 | 55,116 | 442 | 44,889 | 360 |
| 1939 | 64,055 | 495 | 49,699 | 384 |

Income.” The statistics under the former subheading include income from all sources including government; those under the latter heading income derived only from production by private industry. The figures are all taken from a book published by the National Industrial Conference Board entitled “The National Income in the United States,” excepting that we have combined into five-year periods the annual figures given by the board for years subsequent to 1899.

The figures show there was never a decade in the first 100 years of the country's history (1799-1899), excepting that ending with 1819, when the national income did not increase. They show furthermore, that there was never a five-year period from that ending in 1904 to that ending in 1929 in which average annual national income and average annual income per

capita did not increase. But they also show (1) that in the five-year period ending with 1934 average annual national income declined below what it had been in any five-year period since that ending with 1919, and average annual income per capita to the lowest level in any decade since that ending with 1914; and (2) that in the five-year period ending with 1939

average annual national income was still much lower than in the five years ending with 1929, and average annual income **per capita** still lower than in either of the **two** five-year periods ending with 1924 and 1929. Even in the five-year period (1920-1924, inclusive) that included the slump of 1921-1922 both average annual national income and average annual income per

Truck Competition May Grow More Severe

Should the railroads strike boldly **now** to revise their rate structure to reduce the profitable radius of truck operation—or will it be easier to withstand this competition after the truck lines have consolidated, obtained additional capital, and otherwise fortified their expanding vested interests?

We raise this question with an eye on the Transport Company's application to the I. C. C. for authority to consolidate 31 large Eastern trucking companies. They contemplate issuing \$30,000,000 of securities, which is 3 times the present depreciated book value of the properties to be merged. The organizers propose to pay the present owners nearly 2½ times their depreciated book value, largely in cash. They seek to provide much needed capital to purchase additional equipment to take care of increasing business—which is continuing to grow much faster than general business is expanding. They contemplate reducing present operating expense by at least 10 per cent. It is strongly rumored that other similar consolidations are in prospect.

These companies earned 24 per cent on their investment in 1939, and converted 6½ per cent of their gross into net. Their handsome net is largely due to a 4 to 1 turnover.

No railroad man needs to be reminded how easy it is for railroads to translate increased gross into a comparatively high percentage of increased net. A 12 per cent increase in railroad revenues for the 17 months ending May 31 brought an increase in operating expenses of only 7.5 per cent and resulted in a 57 per cent increase in net railway operating income. This fact can well be considered in connection with the further observation that the trucks cannot stand up under reductions which railroads can easily make. Instead, they would have to relinquish the traffic to the railroads.

For instance, a 10 per cent reduction in the 1937 revenues of large trucking companies (i. e., gross of over \$1,000,000 in 1939) east of the Rockies would have resulted in a 12 per cent operating loss for them. It was only the Ex Parte 123 increases which enabled them to avoid a deficit—converting instead 6 per cent of their 1939 gross into net, and improving their total traffic and revenues 36.7 per cent, primarily at railroad expense. A 20 per cent reduction in the 1939 revenues of the 1104 Class I Motor Carriers reporting to the Interstate Commerce Commission would have brought them a 16 per cent operating deficit.

Conditions have changed since 1923. Back in that year it would have cost the railroads a pretty penny to have reduced truck-competitive rates, because most of the traffic was then still moving by rail. But now the trucks are probably handling

two-thirds of total competitive traffic and an even greater proportion of the higher classes. When competitive rates are reduced now, the painful part of the "operation" is less than one-half as bad for the railroads as it is for the trucks, while the favorable results go wholly to the railroads. The accompanying table makes the situation specific and, in your commentator's opinion, obvious.

Comparing 3rd Class and Higher 1923 Rail L. C. L. Traffic With 1939

| With 1939 | | | | | | |
|--|--------------------------------------|--|---|--|--|---|
| Moving within 100 miles by classes | Rail revenue 1923 ^a | Rail l.c.l. revenue 1939 ^b | Esti- mated l.c.l. truck revenue 1939 ^c | Tenta- tive reduc- tions % | Esti- mated reduc- tion l.c.l. truck revenue | Esti- mated reduc- tion l.c.l. rail revenue |
| | Thousands | | | | Thousands | |
| | | | | | | |
| 1st & higher .. | \$25,600 | \$5,500 | \$20,100 | 50 | \$10,500 | \$2,752 |
| 2nd class | 12,300 | 5,040 | 7,260 | 30 | 2,178 | 1,512 |
| 3rd class | 25,600 | 7,060 | 18,540 | 10 | 1,854 | 706 |
| 1 and 300 miles | | | | | | |
| 1st & higher .. | 64,000 | 17,740 | 46,260 | 40 | 18,504 | 7,096 |
| 2nd class | 38,400 | 16,130 | 22,270 | 20 | 4,454 | 3,226 |
| 3rd class | 51,200 | 24,190 | 27,010 | 10 | 2,701 | 2,419 |
| Beyond 300 miles | | | | | | |
| 1st & higher .. | 128,000 | 32,150 | 95,850 | 30 | 28,755 | 9,647 |
| 2nd class | 64,000 | 29,230 | 34,770 | 20 | 6,954 | 5,846 |
| 3rd class | 81,200 | 43,850 | 37,350 | 5 | 1,867 | 2,194 |
| TOTAL REDUCTION | | | | | 77,767 | 35,398 |

^a Eastern Class Rate Investigation Traffic Test expanded to full year 1923.

^b A. A. R. 1939 Special Merchandise Committee Traffic Test expanded to full year.

^c Difference in rail l.c.l. traffic, 1939 under 1923.

The table shows that the above suggested reductions in l. c. l. revenues would hit truck revenues just twice as hard as the railroads' and would seriously impair their ability to continue their operations in the wide radius in which they are now operating. There is much to indicate that the trend in truck competitive carload traffic has been similar to that in l. c. l. and that a 20 per cent reduction in the rates on such traffic for the first 100 miles; 15 per cent for the next 200; 10 per cent for the next 200; and 5 per cent reduction in such rates beyond 500 miles—would double the impairment in truck revenues that would be brought about by the above suggested reduction in l. c. l. rates. All these proposed reductions would affect total railroad revenues but slightly more than 2 per cent—which seems a small price to pay for the large increase in tonnage which such reductions could not fail to bring. How else may the railroads reverse the destructive trend of traffic diversion to their ever-growing competitors?

Stating it differently, is it in the interest of prosperous and economical transportation to continue to tolerate a toadstool growth of facilities, made possible not by any genuine economic merit but only by the relatively high railroad rate ceiling on certain classes of traffic?

capita were much larger than in either the five years ending with 1934 or the five years ending with 1939.

Predictions Based on Assumption of Chronic Stagnation

And yet most people are basing their forecasts of the economic future of this country on its production and commerce during the last utterly unprecedented and abnormal decade and on present trends in its production and commerce. Even the future needs of the railways are constantly being predicated on the assumption that the entirely unprecedented stagnation of the last decade is normal and will be perpetuated, rather than on the assumption that the progress and expansion of the preceding century and a half were normal and will be renewed.

Well, what will occur? That will depend on the nation's leadership in government and business. It now has a leadership in **both government and business** which, almost daily and hourly, commits itself, expressly or tacitly, to the view that stagnation has become the normal condition of the country's business and that nothing is going to be done or can be done about it. But if stagnation is normal, when and why did it become so? It began becoming so when the federal government commenced during the Hoover administration late in 1929 paternalistically interfering to prevent a slump in business from having its natural effects. It has continued to be so to the present time because the Roosevelt regime for seven years has continued paternalistically interfering more and more with business to benefit the "masses" at the expense of the "classes" to the great injury of both. And progress will replace stagnation as normal in this country when the nation has a leadership which no longer accepts defeatism as necessary and does accept the view that there must be made a vigorous and courageous fight all along the line to restore real private enterprise—a private enterprise that asks no doles or other help from government, that is willing to meet all competition on equal terms, but that insists on being free from both government regimentation and government competition.

The way to revive the economic progress that prevailed in this country prior to a decade ago is to revive the government and business policies that prevailed then. If we prove too pessimistic, defeatist and cowardly to do this or even try to do it, we will justify the German claim that we have become decadent—too decadent to deserve either liberty or prosperity.

Indexes to Volume 108

The indexes to the latest volume of the *Railway Age*, January to June, 1940, are now ready for distribution and copies may be had by those subscribers desiring them. Requests should be addressed to the Circulation Department, *Railway Age*, 30 Church Street, New York. Subscribers who have in previous years made

application for the index need not apply again; they will continue to receive it as long as they continue to subscribe.

Safety Conscious

Accidents, even of a minor nature, are costly from both economic and humanitarian viewpoints. Train schedules on a division may be badly disrupted, for instance, even though there may be no heavy material damage, or no loss of life or limb involved. An accident to a member of a track gang or to a shop or repair yard worker may easily cause sufficient disturbance to slow down production badly.

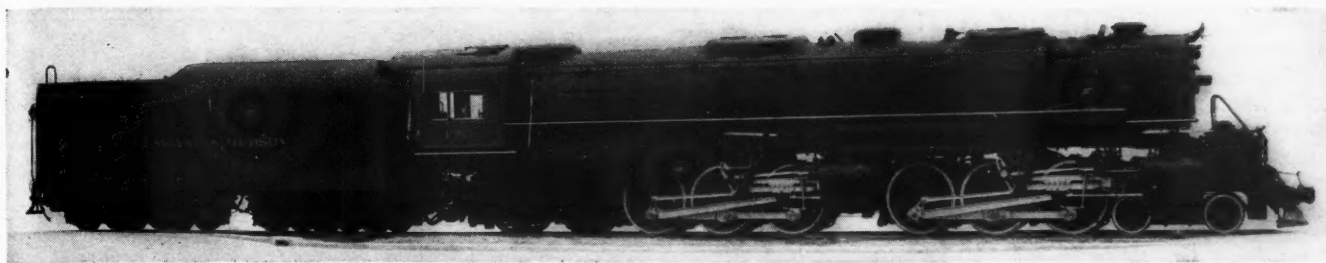
Experience over many years indicates that the best results can be secured only when the entire organization is "safety conscious" and when this spirit is continually stimulated from the man at the top, down to the least important worker. The laborer is, in fact, an important link in the chain, for by using reasonable care he can guard against unsafe conditions in the handling or disposition of materials.

A group of insurance experts recently examined a summer resort hotel and its recommendations were carefully followed in the effort to eliminate unsafe conditions. As an illustration of the force of the safety habit, a railroad officer attending a conference on the grounds casually noted two or three potential hazards that had been overlooked by the experts. He called these to the attention of the management, which was keenly appreciative. How often is an editor, engrossed in studying a piece of railway equipment or a shop operation, embarrassed by having an employee or supervisor caution him against some unsafe position or condition, of which he was entirely unaware!

The problem, of course, is to set up such a program as to develop and maintain this safety consciousness at a high point throughout the entire personnel. Some railroads have accomplished this to an unusual degree. Their identities can readily be determined from the records of the E. H. Harriman and the National Safety Council medal awards.

The *Railway Age* has recently witnessed a rather unusual evidence of safety consciousness in the form of letters from readers, drawing attention to unsafe conditions and practices pictured in some of the display advertisements in its columns. These advertisements cleverly depicted special applications of materials or devices to railroad equipment, but to the initiated they also showed—and apparently condoned—unsafe shop practices and conditions.

While the railroads have good reason to be proud of the relative improvement in their accident records over the years, they still have a far from perfect record in this respect. Humanitarian and economic considerations call for more and more intensive efforts to promote a strong safety consciousness throughout their organizations.



One of Twenty Articulated Locomotives Being Built for the D. & H. by the American Locomotive Company

D. & H. Installs Articulated Freight Locomotives

Single-expansion 4-6-6-4 type develops 94,400 lb. tractive force—Driving wheels are 69 in. in diameter

THE American Locomotive Company is now delivering to the Delaware & Hudson 20 single-expansion, articulated freight locomotives of the 4-6-6-4 type for high-speed, heavy freight service between Wilkes-Barre, Pa., Binghamton, N. Y., and Mechanicsville, N. Y.

The locomotives have cylinders 20½ in. in diameter by 32 in. stroke, 69 in. driving wheels, and carry a boiler pressure of 285 lb. per sq. in., which produces a calculated tractive force of 94,400 lb., but with the rolling friction reducing devices applied a greater proportion than usual of this figure is confidently expected to be available for drawbar pull.

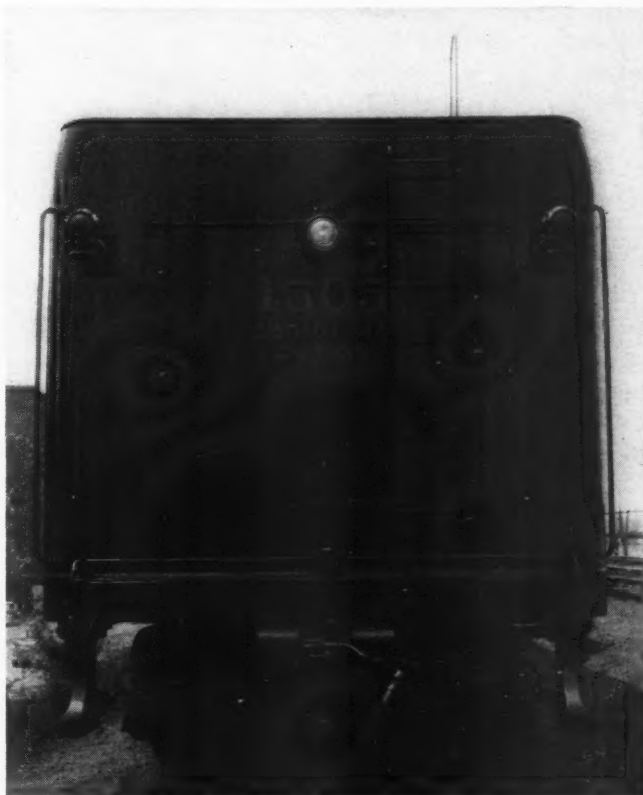
The weight per driving axle was limited by the specification to 68,000 lb., making the total weight on drivers 408,000 lb. The actual weight on drivers is 406,500 lb. It was further specified that the weight on the front engine was to be adhered to when the locomotive was on a 1½ per cent ascending grade. In order to accomplish this, the weight on drivers was distributed to bring more weight on the front engine than on the rear. The actual weight on the front engine drivers is 205,500 lb., while on the rear engine drivers it is 201,000 lb. The excess weight on the front engine drivers is provided to overcome slipping tendency of the front engine when ascending grades due to the surge of the water in the boiler toward the rear and other causes which reduce the adhesive weight on the front engine.

The total weight of the locomotive is 597,000 lb., of which 76,000 lb. is carried on the leading truck and 114,500 lb. on the trailing truck. The weight of the tender in working order (with a two-thirds load of coal and water) is 310,200 lb., making the combined weight of the locomotive and tender 907,200 lb.

From the southern end of the Wilkes-Barre line originates a large tonnage of anthracite coal which moves north toward Canada and New England. Between Wilkes-Barre, Binghamton and Mechanicsville there is a considerable movement of manifest freight which has increased greatly in volume during the past few years. The increasing necessity for maintaining schedule deliveries to connecting roads has made imperative the

employment of modern motive power suitable to meet this requirement, often operating under adverse conditions.

The line between Wilkes-Barre and Mechanicsville is 215 miles long and crosses two summits, with maximum grades of 1.5 in either direction. Starting from the elevation of 550 ft. in Wilkes-Barre, the elevation rises to a maximum of 2,032 ft. in a distance of 54 miles. Within this distance there are two heavy grades. The first is about three miles long, with grades varying from 1.10 to 1.49 per cent, and the second, 5 miles long, with



grades from 1.17 to 1.52 per cent, followed by 14 miles of grades from 0.64 to 1.02 per cent.

North of this summit is a long descent of 19 miles, with a maximum grade of 1.5 per cent. This is followed by a long slowly ascending river grade of 56 miles to Oneonta, N. Y. From Oneonta north there is a rise of 417 ft. in the next 27½ miles, with a maximum grade of 0.5 per cent. North of this summit at Dante, N. Y., is a 7½-mile descent averaging 1.3 per cent. The remaining 46 miles to Mechanicsville are roll-



The Four-Wheel Engine Truck Is Connected to the Spring System of the Front Unit Through Bissel Pin, Equal Beam and Cross Equalizer

ing with maximum grades northbound of 0.8 per cent and short grades of 1 per cent and slightly over southbound. The elevation at Mechanicsville is 106 ft.

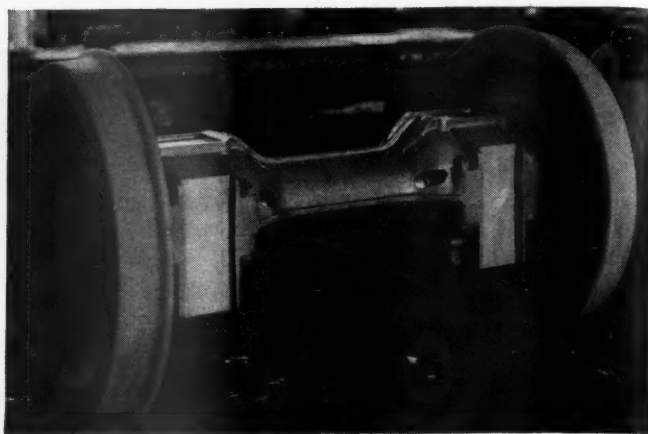
The line from Binghamton and the line from Wilkes-Barre converge at Nineveh, N. Y., 93 miles north of Wilkes-Barre and 24 miles north of Binghamton. In the 24 miles from Binghamton to Nineveh the elevation changes from 864 ft. at Binghamton to 1,447 ft., with a maximum grade of 1.06 per cent for about 5½ miles and a maximum descent northbound beyond the summit of 1.32 per cent for about 5½ miles. The elevation at Nineveh is 1,034 ft.

Prior to the delivery of the articulated locomotives, the D. & H. operated exclusively in this service consolidation types of much less individual power, a condition which required for the distance between terminals an unusual amount of helper service and double heading. The driving wheels of the consolidation type locomotives in this service are 57 in. and 63 in. in diameter, and counterbalance conditions for the high rotative speeds required were not all that could be desired. The adoption of this Mallet type locomotive with 69-in. driving wheels has solved many of the past operating difficulties insofar as decreasing track stresses through shorter rigid wheel base and better counterbalance conditions are concerned.

The Boiler

The boiler is of the straight-top type, 94 $\frac{11}{16}$ in. inside diameter at the first course and 102 in. outside diameter at the largest course. Barrel courses and welt strips are of Lukens carbon steel. The Elesco type A superheater has 60 5½-in. No. 8 flues of National seamless steel and 222 2¼-in. No. 12 Electrunit tubes 22 ft. long. The heating surface of the flues is 1,892 sq. ft.; of the tubes, 2,864 sq. ft., and of the superheater pipes, 1,681 sq. ft.

The firebox has a horizontal mud ring and is of welded construction, 213 $\frac{1}{32}$ in. long inside by 108 $\frac{3}{16}$ in. wide inside, with a combustion chamber 94 in. long. It has



The Top Halves of the Engine-Truck Journal Boxes Are Joined in a Single Casting

a grate area of 108 sq. ft. The heating surface of the firebox is 556 sq. ft. and that of the arch tubes 77 sq. ft. Soft coal is burned on Firebar grates fed by a Standard HT type stoker, with engine on the tender. Fire doors are Franklin No. 8. The American firebrick arch has a vertical transverse wall. It is supported on five arch tubes 4 in. outside diameter, ¼ in. thick, furnished by the National Tube Company, which have their front ends secured in a special design thimble. Huron washout plugs and Okadee blow-off cocks are used.

The flexible staybolts are of the Alco welded-sleeve type, of which there is a complete installation in the combustion chamber and throat sheet, except in the bottom row and in the breaking zones of the side sheets. Alco crown, radial and expansion stays are also used. Flexible stays of Ewald iron are on all of the engines, but hollow and solid staybolts of Ulster iron are on 19 of the locomotives while for one locomotive Lewis iron is used. Flexible staybolts coming inside of the cab on the back head and sides of the firebox are of the large-head, two-piece Flannery type, hollow drilled up to the head. Where flush flexibles are required, they are the small-head Flannery type.

The boiler is fed by one Hancock non-lifting type 3-W injector of 10,000 gallons' capacity located on the right side, and one Elesco No. 3 exhaust-steam injector of 12,000 gallons' capacity located on the left side. Delivery is through a Hancock twin top boiler check.

The smokebox netting arrangement is to the A. A. R. latest recommended practice, using No. 393 Draftac netting. The smokebox door is of sufficient size to permit the removal of the superheater units. The headlight is inset in the smokebox door.

The exhaust nozzle is of the Sweeney type and the smoke stack is straight, 26 in. in diameter, with the railroad company's standard shape at the top.

A steam circulating nozzle for admitting steam from the enginehouse steam line to the cold boiler is applied in the bottom of the first course near the front tube sheet. This directs steam toward the back of the boiler to promote circulation and obtain a more nearly uniform temperature all through the boiler, thus reducing the expansional stresses when firing up. Leveling brackets are applied to the left side and across the back head of the boiler, defining the center line longitudinally and transversely for checking the water level.

The Frame Structure

Both the front and back engine units are equipped with General Steel Castings Corporation frame beds

with cylinders cast integrally. Back cylinder heads, guide yoke, valve-gear supports and air-pump supports are also integral parts of this casting.

The articulation hinge comprises a massive tongue cast on the rear of the front engine-bed unit, fitting into a cavity in the front end of the rear engine-bed unit. Bushings for the articulation pin are casehardened and ground, and hard steel wearing plates are applied above and below the hinge tongue. There is only $\frac{1}{32}$ in. clearance between the 8-in. diameter hinge pin and its bushings and only $\frac{1}{16}$ in. clearance between the wearing plates under the bottom of the hinge. Part of the weight of the rear engine unit is transmitted to the front engine unit by reason of its resting on top of the articulation hinge tongue. In the top of the hinge pin is a depression forming an oil reservoir covered by a dust cap and fed by mechanical lubrication so that oil spills down along the surface of the pin. The wearing plates on top of the hinge tongue, which are in contact by reason of the load they carry, are grooved for oil fed from another lead from the mechanical lubricator.

By transmitting the weight of the boiler at two points on the front frame structure—namely, the main boiler bearing and the articulation hinge—perfect stability of the front frame structure is afforded with no tendency to rock as when only the main boiler bearing is the weight transferring means. This requires, however, that the spring rigging must be built with a maximum of flexibility and the engine truck equalized with the spring suspension of the front engine unit.

The Running Gear

The driving wheels are of the Alco Boxpok type. The main wheels are the rear pair on each unit and are the only pair which are cross-counterbalanced. The reciprocating weights per side amount to 1,695 lb. on the front unit and 1,540 lb. on the rear unit. The overbalance is uniformly distributed over the three wheels on each side of each unit and amounts to 172 lb. per

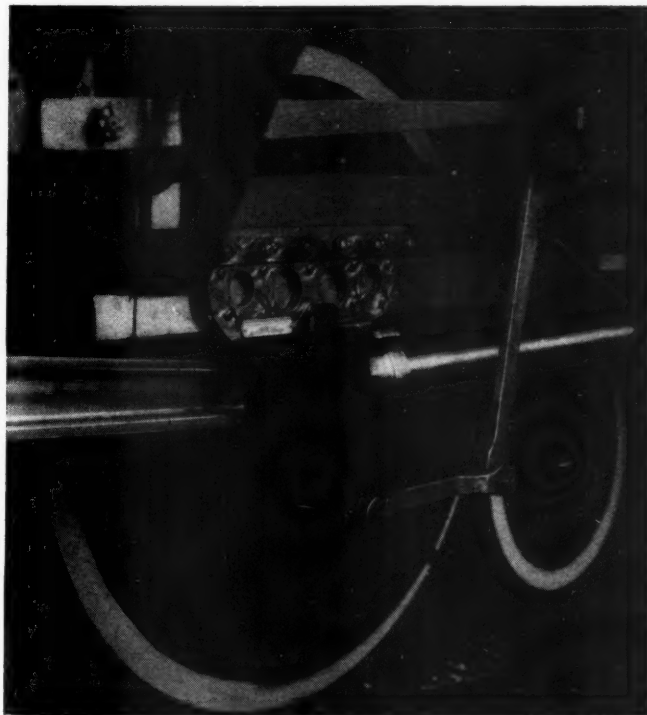
wheel on the front unit and 157 lb. per wheel on the back unit.

The main driving axles of each unit are fitted with SKF roller bearings, while the other two pairs have plain bearings. On the plain-bearing driving boxes and trailer boxes bronze hub faces are formed by depositing Herculoy fusion rod, and the driving boxes are equipped with Franklin No. 8 grease lubricators and spreaders. To the front driving axle of each unit an Alco lateral driving-box cushioning device is applied. This permits $\frac{1}{2}$ in. lateral movement on each side. The initial resistance of the lateral cushioning device on the front unit is 17 per cent and that on the rear unit is 8 per cent.

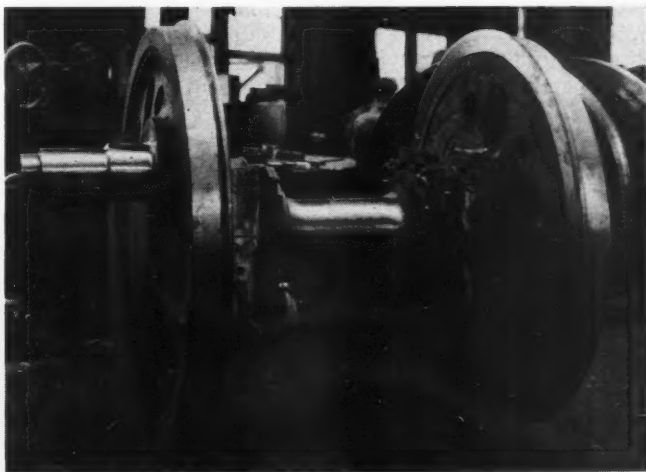
The locomotives have Alco geared roller centering-device engine trucks providing $4\frac{1}{2}$ in. swing each side of the center, with an initial resistance of 17 per cent, increasing through the first two inches of lateral movement to $33\frac{1}{3}$ per cent and continuing constant throughout the remaining lateral-motion range. SKF roller bearings are applied to the engine-truck axles. The top halves of the bearing housings are connected transversely, while the lower halves are separate.

The trailer truck is of the General Steel Castings Delta outside-bearing type. The front trailing-truck axle boxes have a lateral movement of 1 in. each side of the center and are fitted with the Alco centering device giving 10 per cent resistance throughout its travel range. The swing of the trailing truck is $8\frac{3}{4}$ in. each side of the center. The initial resistance is 9 per cent, but builds up gradually to 17 per cent which is constant through the remaining moving range.

The shoes and wedges are of bronze. Franklin auto-



The Becker Wrist Pin Is Applied and Held by Gib and Wedge from the Outside of the Crosshead

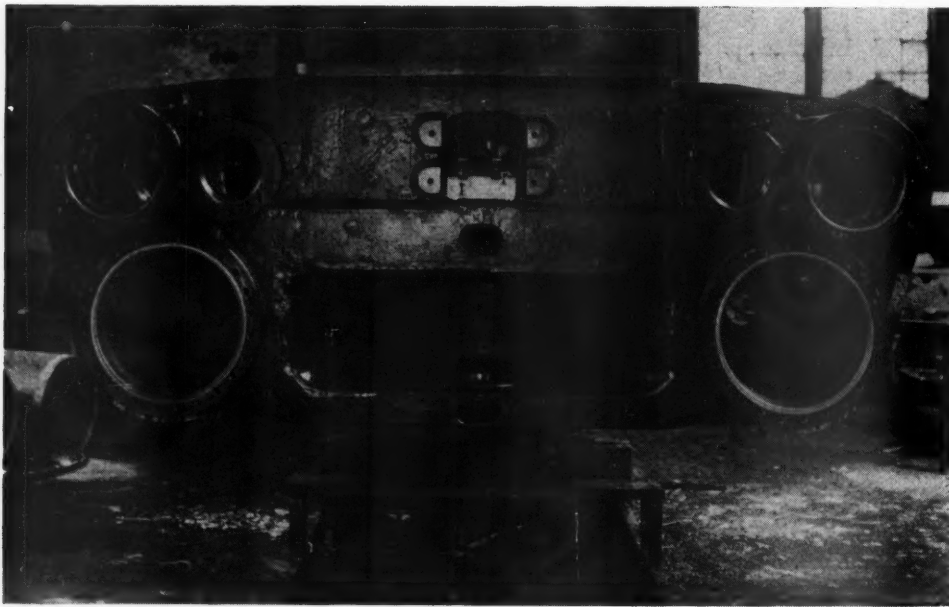


SKF Roller-Bearing Journal Boxes on a Pair of Main Driving Wheels

matic wedges are applied to all driving boxes, except the main.

The pistons are of the box section type, made of Hunt-Spiller gun iron with Hunt-Spiller sectional duplex packing, one bronze and one gun-iron ring. Cylinder bushings and valve-chest bushings are of Hunt-Spiller gun iron. Paxton-Mitchell packing is used on both the piston rods and the valve stems. Head-to-head clearance front and back is $\frac{5}{16}$ in.

Crossheads are of the Laird type and are arranged with the Becker design of wrist pin, removable from the outside. Side and main rods are of carbon-nickel steel, normalized, quenched and tempered. Alemite lubrication is provided for all pins, the fittings being applied in the builder's design of internal grease cavity which uses Whitworth threads for all holes tapped in



The Front End of the Rear Bed Casting, Showing the Articulation Hinge Pocket

the rods. Floating bushings of Magnus bronze are used on all crank pins.

Walschaert valve gear is used with trunnion design of links and special lightweight design of eccentric cranks attached to the main crank pins with two bolts each. The eccentric rods are channeled on the outside to within 12 in. of the front ends. Alco Type G reverse gear is used with 10-in. cylinder and is connected to the reverse-shaft arm of the rear engine. The reach-rod connection to the front engine is made by a rod extending forward on the center line of the locomotive. A crosshead operating in a cylindrically shaped guide fitted into the rear cylinder saddle contains a vertical pin located exactly in vertical alignment with the artic-

ulation hinge pin to take care of the lateral swing of the front engine unit. The twelve-inch piston valves have $7\frac{1}{2}$ in. travel, $\frac{3}{16}$ in. lead, $1\frac{1}{4}$ in. lap. The exhaust clearance is line and line.

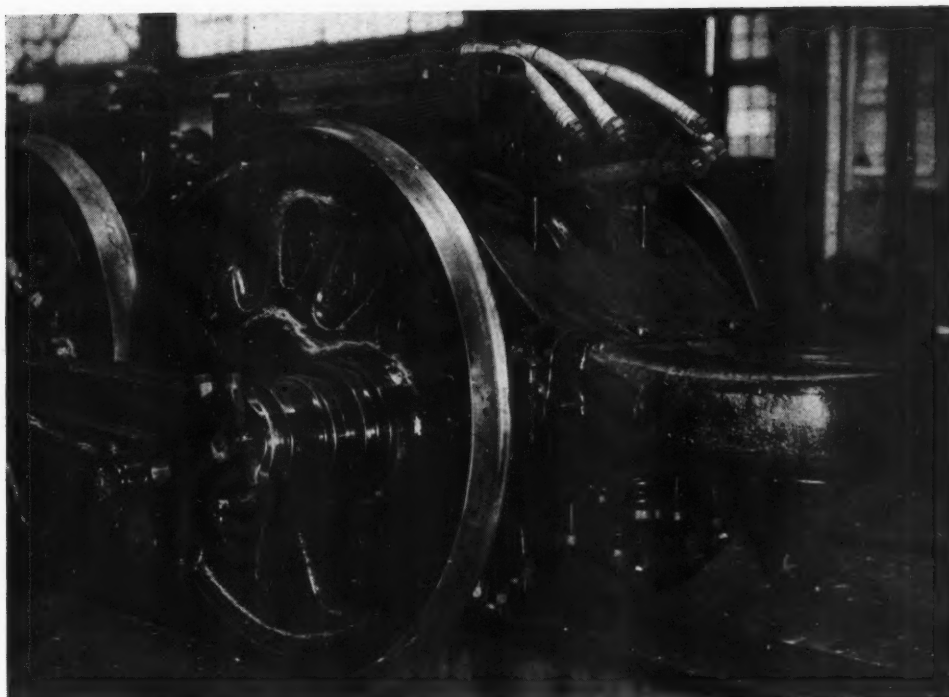
Great care was exercised to obtain free passage for the steam through the cylinders. The area through the valve-bushing ports when the piston is at the end of the stroke is 38 sq. in., or $11\frac{1}{2}$ per cent of the piston area. Through the cylinder port the area is 34 sq. in., which is 10.3 per cent of the piston area. The clearance volume of the cylinder is 9.3 per cent.

Steam pipes are of the builder's latest non-spreading jack-knife design. An elbow with a bottom outlet on each side of the smokebox divides and directs the steam



The Sides of the Boiler and Front End Have Been Kept Free from Obstructions to Vision

The Rear End of the Front Engine Truck—The Tongue Fits in and Bears against the Top of the Hinge Pocket in the Front End of the Rear Bed Casting



General Dimensions and Weights of the D. & H. 4-6-6-4 Type Freight Locomotives

| | |
|--|-------------------------|
| Railroad | D. & H. |
| Builder | American Locomotive Co. |
| Type of locomotive | 4-6-6-4 |
| Road class | J-95 |
| Road numbers | 1500-1519 |
| Date built | 1940 |
| Service | Fast freight |
| Rated tractive force, engine, 85 per cent, lb. . . | 94,400 |
| Weights in working order, lb.: | |
| On drivers | 406,500 |
| On front truck | 76,000 |
| On trailing truck | 114,500 |
| Total engine | 597,000 |
| Tender | 310,200* |
| Wheel bases, ft.-in.: | |
| Driving | 12-2 |
| Engine total | 59-11 |
| Engine and tender total | 103-6 |
| Driving wheels, diameter outside tires, in. . . . | 69 |
| Cylinders, number, diameter and stroke, in. . . | 4-20 1/2 x 32 |
| Valve gear, type | Walschaert |
| Valves, piston type, size, in. | 12 |
| Maximum travel, in. | 7 1/2 |
| Boiler: | |
| Steam pressure, lb. | 285 |
| Diameter, first ring, inside, in. | 94 11/16 |
| Firebox length, in. | 213 1/13 |
| Firebox width, in. | 108 3/16 |
| Combustion chamber length, in. | 94 |
| Arch tubes, number and diameter, in. | 5-4 |
| Tubes, number and diameter, in. | 222-2 1/4 |
| Flues, number and diameter, in. | 60-5 1/2 |
| Length over tube sheets, ft.-in. | 22-0 |
| Fuel | Bituminous |
| Grate area, sq. ft. | 108 |
| Heating surfaces, sq. ft.: | |
| Firebox and comb. chamber | 556 |
| Arch tubes | 77 |
| Firebox, total | 633 |
| Tubes and flues | 4,756 |
| Evaporative total | 5,389 |
| Superheater | 1,681 |
| Comb. evap. and superheat | 7,070 |
| Tender: | |
| Style | Water bottom |
| Water capacity, gal. | 22,500 |
| Fuel capacity, tons | 26 |
| Trucks | Six wheel |

* With two-thirds load of coal and water.

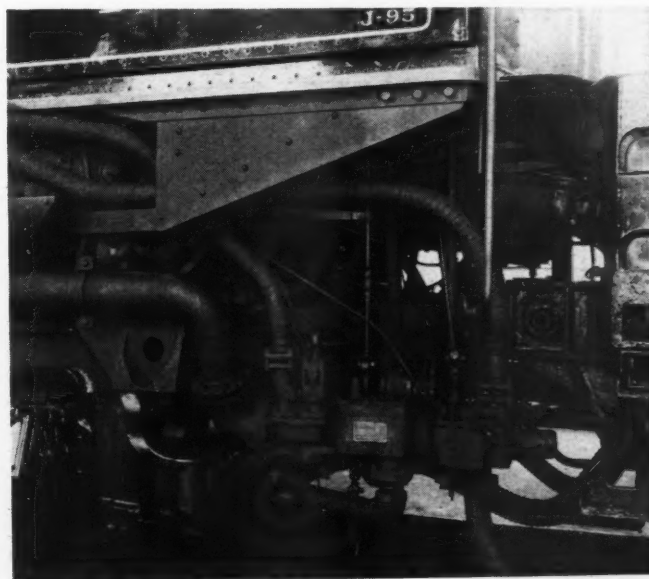
flow to the front and rear cylinders. The arrangement leading to the front cylinders is a jack-knife type, the ball joints of which provide universal movement. Soft packings are used at the cylinder connection only. All joints are mechanically lubricated. Above the steam chest of the rear cylinders the steam pipe terminates in a balanced slip joint, the slip pipe being ported and

packed on both ends with Sea Ring packing. The exhaust from each of the rear cylinders extends forward in a pipe which joins on a Y-fitting at the nozzle base. The exhaust pipe from the front cylinders has the usual ball joints front and rear with a ring-packed slip joint.

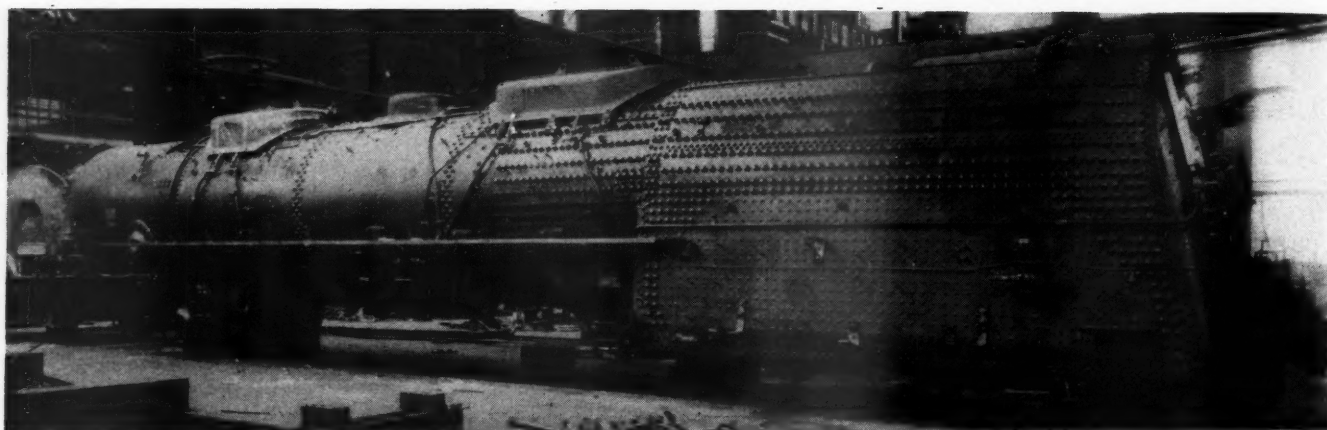
Steam enters the drypipe on one locomotive through the Tangential steam dryer and on one locomotive through the Dri-Steam separator. The remaining locomotives are so designed that ready application of either type can be made.

The Spring Rigging

The springing of the engine truck employs the parallel spring suspension wherein one-third of the load is carried on semi-elliptic springs and the remaining two-thirds on coils. This permits the use of a much shallower and, therefore, a much more flexible semi-elliptic



Engine and Tender Connections with the Elesco Exhaust-Steam Injector in the Foreground—The Cab Is Supported by Brackets Attached to the Boiler



The Boiler Ready for the Erecting Shop

damping spring, while the initial shocks are absorbed by the coils, which promotes more flexible and smoother riding qualities.

The driving springs are all seated on rollers with cushioning coil springs at the dead ends of the system. The rear end of the forward equalizer rests on top of a spring seat extending between two vertical hangers and bearing on coil springs. Split, shouldered bushings surround the front ends of the coil-spring hangers and rest on collars formed on their lower ends. Since these coil springs cannot be located on the center line of the frames, their hangers are attached to transverse equalizers and, except at the rear end of the forward equalizer, these coils are located just as near the inside of the frames as possible. At the front and rear ends of the spring suspension system of the rear engine unit these cushioning coil springs are arranged in tandem to give greater vertical flexibility.

No gib connections are used at the upper end of the driving- and trailing-truck spring hangers, but instead they are looped over steel castings resting on the spring end clips. Fabreeka inserts $\frac{1}{4}$ in. thick are placed under all elliptic spring end clips. All spring-rigging pins and the under sides of all loop hangers are Alemite lubricated.

Lubrication

The front engine is fitted on the right side with a Nathan DV-7 36-pint force-feed lubricator, feeding valve oil to the cylinders and valves, guides and steam-pipe ball joints (front). On the left side is fitted a Detroit force-feed lubricator feeding car oil to shoes and wedges of all pedestals, driving-box hub faces of the first two axles, flange lubricator on the front drivers, engine-truck center plate and engine-truck centering-device gear racks.

The rear engine is fitted on the right side with a Nathan DV-7 36-pint force-feed lubricator feeding valve oil to the throttle, steam-pipe ball joints (back), cylinders and valves, guides and stoker. On the left side is a Detroit force-feed lubricator, feeding car oil to the articulation hinge pin, main boiler bearing, flange lubricator on front drivers, radial buffer, all shoes and wedges on the rear engine, driving-box hub faces on the first two axles, and trailing-truck fulcrum pin.

Alemite lubrication is arranged for on all brake-hanger and spring-rigging pins, throttle rigging, bell, engine-truck pedestal shoes, the bearing points of the forward equalizer, exhaust-pipe joints, drawbar pins, rod knuckle pins, steam-pipe extension joint at rear cylinders, and reverse-gear connecting rod.

Wick-feed oilers are applied to the link trunnions and valve-rod cross-heads on top of the valve-stem guides to lubricate the top pins in the combination levers.

The cab is supported entirely from the boiler by the builder's design of cab support and is not connected in any way with the frames. By this means the cab travels with the expansion of the boiler and no connection to the frame is subjected to movement at one end while being rigidly attached to the other. The cabs are particularly large and roomy. On the left side, back of the fireman's seat, a seat is provided for the brakeman, while on the right side back of the engineman's seat is a clothes locker for the crew. The gages on the fireman's side are combined in a case having concealed illumination and through which air is circulated. A pipe extends above and below this case. At the bottom of the lower or intake pipe are right-angle bends front and rear to collect a current of air when running either forward or backward. The pipe extending from the top of the case terminates beneath the cab roof and is the outlet for this upward current of air.

Brakes

Brake operating equipment is New York schedule 8ET with two $8\frac{1}{2}$ -in. cross-compound compressors located on top of the frame ahead of the smokebox and operated by superheated steam. The cooling system includes the New York Air Brake Company finned pipe radiator. Neither the engine truck nor the trailer truck has brakes.

Tender

The tender frame is the General Steel Castings Corporation water-bottom type and the tank is of the rectangular water-leg type designed for 22,500 gallons of water and 26 tons of coal. The tender trucks are General Steel Castings Corporation six-wheel equalized type with 7-in. by 14-in. journals, 36-in. rolled-steel wheels, Miner rocking roller type side bearings, and American Steel Foundries clasp brake. Miner type A-22-XB draft rigging is used and the Franklin E-2 radial buffer. Barco Type 3-VX flexible joints are installed between the engine and tender on the air-brake train line, the tender-brake-cylinder connection, the stoker-engine steam line, and other flexible pipe connections.

All piping extending along the boiler is concealed under the jacket, only the throttle pull rod and hand rail being visible. The sand traps are likewise placed under the jacket and the sand-box steps when not in use fold up flush with the jacket. Also the smokebox

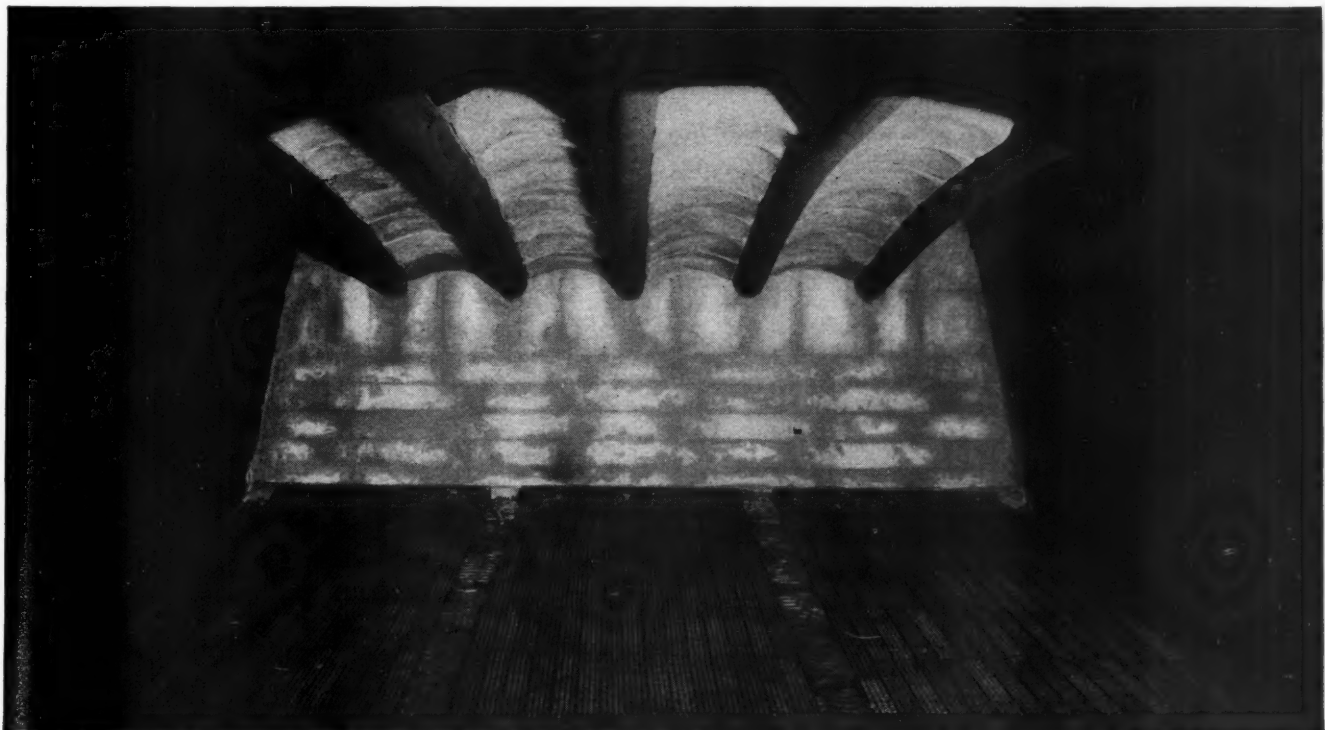
is tapered $6\frac{1}{16}$ in. All of these provisions, together with the use of a top boiler check, were made to secure the best possible vision ahead for the enginemen.

Partial List of Materials and Equipment on the D. & H. 4-6-6-4 Type Freight Locomotives

| | |
|---|--|
| Steel, miscellaneous | Scully Steel Products Co., Chicago |
| Steel; floor plates | Carnegie-Illinois Steel Corp., Pittsburgh, Pa. |
| Engine-truck side frame and equalizer; crosshead; alloy-steel, and miscellaneous castings | Adirondack Foundries & Steel, Inc., Watervliet, N. Y. |
| Engine bed | General Steel Castings Corp., Eddystone, Pa. |
| Pattern plate | Alan Wood Steel Co., Conshohocken, Pa. |
| Trailing-truck centering-device, rollers, manganese steel castings | Symington-Gould Corp., Rochester, N. Y. |
| Drypipe and main steam pipe | National Tube Co., Pittsburgh, Pa. |
| Pipe fittings | Crane Co., Chicago |
| Wrought-iron pipe—handrail | Cohoes Rolling Mill Co., Cohoes, N. Y. |
| Copper tubes | Chase Brass & Copper Co., Inc., Waterbury, Conn. |
| Copper ferrules | Phelps Dodge Copper Products Corp., New York |
| Brass fittings | Cleveland Copper Ferrule Co., Cleveland, Ohio |
| Expansion stays | Magnus Metal Div., National Lead Co., New York |
| Flexible bolts | American Locomotive Co., New York |
| Staybolt iron | American Locomotive Co., New York |
| Steel rivets | Flannery Bolt Co., Bridgeville, Pa. |
| Nuts | Ewald Iron Co., Louisville, Ky. |
| Engine truck | Joseph T. Ryerson & Son, Inc., Chicago |
| Engine-truck wheels | Ulster Iron Works, Dover, N. J. |
| Trailer wheels | The Champion Rivet Co., Cleveland, Ohio |
| Centering device: | Grip Nut Co., Chicago |
| Front truck and trailer front wheel | American Locomotive Co., New York |
| Trailer truck | American Locomotive Co., New York |
| Driving-wheel centers and trailing truck | Flannery Bolt Co., Bridgeville, Pa. |
| Lateral cushioning device .. | Ewald Iron Co., Louisville, Ky. |
| Tires, driving and trailer .. | Joseph T. Ryerson & Son, Inc., Chicago |
| Couplers, trailing-truck box lids | Ulster Iron Works, Dover, N. J. |
| Springs | The Champion Rivet Co., Cleveland, Ohio |
| (10) | Grip Nut Co., Chicago |
| (10) | American Locomotive Co., New York |
| Coupler centering device | American Locomotive Co., New York |
| Roller bearings, engine truck and main axle | Bethlehem Steel Co., Bethlehem, Pa. |
| Roller-bearing box housings .. | American Rolling Mill Co., Middletown, Ohio |
| | Adirondack Foundries & Steel, Inc., Watervliet, N. Y. |
| | American Locomotive Co., New York |
| | General Steel Castings Corp., Eddystone, Pa. |
| | General Steel Castings Corp., Eddystone, Pa. |
| | American Locomotive Co., New York |
| | Midvale Co., Philadelphia, Pa. |
| | National Malleable and Steel Castings Co., Cleveland, Ohio |
| | Crucible Steel Co. of America, Pittsburgh, Pa. |
| | Union Spring & Mfg. Co., New Kensington, Pa. |
| | Standard Railway Equipment Co., Chicago |
| | SKF Industries, Philadelphia, Pa. |
| | Lebanon Steel Foundry, Lebanon, Pa. |

| | |
|--|---|
| Driving-box cellars; frame wedges | Franklin Railway Supply Co., Inc., New York |
| Box packing waste | J. Milton Hagy Waste Works, Philadelphia, Pa. |
| Pedestal face liners | American Locomotive Co., New York |
| Wrecking frog | Manganese Steel Forge Co., Philadelphia, Pa. |
| Radial buffer | American Chain & Cable Co., Inc., Bridgeport, Conn. |
| Bumpers | Franklin Railway Supply Co., Inc., New York |
| Spring clip pads | General Steel Castings Corp., Eddystone, Pa. |
| Operating brakes; driver brakes; main reservoir .. | Fabreeka Products Co., Boston, Mass. |
| Brake shoes | New York Air Brake Co., New York |
| Driver-brake rigging | American Brake Shoe & Foundry Co., New York |
| Air-pump packing | American Brake Co., St. Louis, Mo. |
| Air-pump strainer | The U. S. Metallic Packing Co., Philadelphia, Pa. |
| Slidguide attachment; reverse gear | Staynew Filter Corporation, Rochester, N. Y. |
| Bearing bushings; bearings (driving, trailer, eccentric rod, main and side rod); crosshead liners | American Locomotive Co., New York |
| Packing—Throttle air joint, exhaust-steam injector, expansion joint, ball joint .. | Magnus Metal Div. National Lead Co., New York |
| Piston-rod and valve-stem packing | Johns-Manville Sales Corp., New York |
| Piston-valve and cylinder bushings; valve bull rings; pistons; combination H-S gun iron and bronze duplex sectional piston packing rings; piston-valve packing rings of H-S air furnace gun iron | Paxton-Mitchell Co., Omaha, Neb. |
| Packing rings (wrist pins) .. | Hunt-Spiller Manufacturing Corporation, Boston, Mass. |
| Cylinder cocks; cylinder-cock valves | The Garlock Packing Company, Palmyra, N. Y. |
| Drain valves | The Okadee Company, Chicago |
| Firebrick | The Lunkenheimer Company, Cincinnati, Ohio |
| Firebox and boiler steel | American Arch Co., Inc., New York |
| Firebrick cement | Lukens Steel Co., Coatesville, Pa. |
| Boiler-bearing saddle | Johns-Manville Sales Corp., New York |
| Saddle seat wearing plates .. | General Steel Castings Corp., Eddystone, Pa. |
| Arch tubes and flues | American Locomotive Co., New York |
| Tubes | National Tube Co., Pittsburgh, Pa. |
| Fire door | Republic Steel Corporation, Cleveland, Ohio |
| Throttle | Franklin Railway Supply Co., Inc., New York |
| Throttle lever quadrant markers | American Throttle Co., New York |
| Lagging | Magnus Metal Div. National Lead Co., New York |
| | Philip Carey Mfg. Co., Lockland, Ohio |
| | Johns-Manville Sales Corp., New York |
| | Keasby & Mattison Co., Ambler, Pa. |

(Continued on page 218)



The Brick Arch Ends in a Bridge Wall at the Front End of the Firebar Grates



Seeks Greatest Through



9,073 Miles of Track Were Tested on the Missouri Pacific in Initial and Repeat Runs in 1939, Employing the Most Up-to-Date Equipment for This Service, and a Procedure Which Insures the Greatest Efficiency and Economy

SEEKING the utmost in rail safety for fast passenger and freight service alike, the Missouri Pacific Lines are now engaged in their tenth consecutive year of rail testing with a rail flaw detector car, which, to January 1, 1940, had witnessed the inspection of more than 82,000 track miles of rails, some of it as many as 23 times, this representing the largest total mileage of rail tested to date by any individual road. Equally interesting is the fact that throughout the last six of these years, the Missouri Pacific Railroad (that part of the Missouri Pacific Lines north of Texarkana and Lake Charles, La.) has been operating under a plan which calls for the inspection of all rail in all of its more important passenger and freight-carrying lines at least twice yearly, the total mileage inspected having increased from year to year, reaching a peak of 9,073 miles in 1939. This represents the longest period of continuous testing by any road in the country.

Throughout these years careful records have been kept of all phases of the testing work, and these show that hundreds of potential hazards have been removed from the track. Throughout these same years, through refinements made in the equipment employed and in testing procedure, the accuracy of the testing has improved materially and the various types of defects in rails are now discovered in the earlier stages of their development. At

the same time, through regularity in scheduled testing operations and close co-operation between the roadway and transportation departments, progressively increasing protection has been given to movements of the rail flaw detector, with resulting increased overall efficiency of testing, as measured by the ratio of actual testing time to the total car time paid for.

4,212 Miles Inspected at Least Twice Annually

The continuous testing of rail on the Missouri Pacific Railroad, with which the remainder of this article will deal, began on April 28, 1931, following extensive experimental testing in 1929 and 1930, and since that time this road has employed progressively the latest improvements in methods and equipment developed by Sperry Rail Service, including the larger one-unit cars, the more sensitive and selective searching units, simplification of the tape records, pre-energization of the rail to correct polarity, and many others. In the eight months of testing in 1931, approximately 2,790 track miles of rails were inspected, about one-half of it twice. Since that year, more than 4,000 miles of track have been tested annually in an enlarging program, which, since 1935, has called for two inspections of all rail, and more frequent inspections in a few special locations. During the last five

st Rail Safety h Regular Testing

Practice on the Missouri Pacific, followed for six years, calls for at least two inspections annually—Records show value and increased efficiency of work

years the track mileage tested has been fixed at 4,212, while within these years, 1935 to 1939, inclusive, the actual mileage tested by the detector car in its initial and repeat runs has ranged from a low of 8,065 miles in 1937, to a high of 9,073 miles in 1939.

The mileage tested in these years, and now being tested in the 1940 program, includes all lines carrying high-speed passenger trains, as well as those carrying heavy, important freight trains with little or no passenger service, such as certain of the lines penetrating the coal fields in southern Illinois. This scope of testing is shown on the accompanying map of the Missouri Pacific, where the mileage tested is indicated in solid lines, while that not tested, carrying only secondary trains at lower speeds, is indicated in dash lines. Analysis of the mileage represented by this map indicates that approximately 55 per cent of all tracks are tested at least twice annually, and that of the mileage tested, 90 per cent is first-main track and 10 per cent is second-main track. Furthermore, analysis of the yearly program of testing on the road indicates that in the interest of maximum rail safety and the greatest efficiency in carrying out the testing work, the detector car, insofar as possible, is operated over the different lines in advance of the heaviest seasonal movements on these lines, and is kept away from the more northerly lines during the winter months where operations might be hampered or slowed up by unfavorable weather conditions. With these two factors in mind, a large part of the testing done during the fall and winter is confined to the southern lines, extending from St. Louis, Mo., to Gale, Ill., Texarkana, Ark., and Lake Charles, La., which not only affords the most favorable testing conditions during these months, but which places the testing of these lines immediately ahead of the heavy spring movements of fruits and vegetables northward over them, as well as the heavy winter movement of coal from southern Illinois.



When a Defect Which Might Be a Transverse Fissure Is Indicated on the Tape Record, the Rail Is Hand Checked to Determine the Character, Size and Exact Point of the Defect



Early in the spring and summer, testing is shifted to the more northerly lines, and, in particular, to the main lines west of St. Louis, to permit the inspection of the rail in this territory immediately ahead of the heavy produce movements eastward from the mountain and coast regions, and grain movements from the Middle West. Going a step further in the interest of the greatest safety of train operation, the Missouri Pacific has made it a practice to operate the detector car over those tracks involved in speeded-up train schedules, as closely in advance of the inauguration of these schedules as possible. For example, when the Marathon, the fast daylight train between Omaha, Neb., and Kansas City, Mo., was put on in 1935, the 199 miles of track in this territory was inspected immediately prior to the inauguration of the new service, and then repeatedly at three-month intervals for some time thereafter.

Records Show Justification of Testing

The justification of the long record of repeat rail testing on the Missouri Pacific is found in the carefully accumulated records of the detector car operation. These records are summarized in the accompanying table, which shows for each year from 1931 to 1939, inclusive, the total number of track miles of rail scheduled for inspection two or more times during the year; the track miles of rail actually inspected; the intensity of the inspection



Top—Fissured Rails Detected Are Removed From the Track Promptly. While the Detector Car Moves Ahead in its Inspection Work. Center—Breaking a Rail in Track at the Point of Indicated Defect. Bottom—The Fissure Found in the Above Rail, Directly at the Point of Defect Indicated by the Car

in the scheduled territory; the number of days of actual testing; the average number of track miles of rail inspected per inspection day; and figures relative to the number of defective rails, classified by types of defects, found and removed from the track. These latter figures show that during the nine years under consideration, 14,015 defective rails were detected and removed, including 4,063 containing transverse fissures, 3,472 containing horizontal fissures, and 6,480 containing defects of other types, including vertical split heads, head and web separations, etc., an average over these years of 0.213 defects per track mile, or one defect for each 4.7 miles.

Of particular interest in the records is the generally increasing number of defective rails found through the years of testing, which reached a peak in 1938, when 731 transverse fissured rails, 693 horizontal fissured rails and 745 rails with other defects were found in the tracks tested, a total of 2,169. Of equal interest is the marked drop in all classes of defective rails found during 1939, in spite of several hundred additional miles of testing, when only 644 transverse fissured rails, 287 horizontal fissured rails and 556 rails with other defects were found, a total of 1,487.

Unquestionably, the consistent increase in the number of defective rails found up to and including 1938 was due to several factors, including the improvements which had been made in the detector equipment during these years; the increased wheel loads and speeds of trains; and, to some extent, no doubt, to the general increased age of the rail since testing was started.

The marked drop in all classes of defective rails found in 1939 is not so readily explained, except as it may be attributed to the gradual weeding out of rails prone to develop defects, and to the favorable influence of the 86,000 gross tons of controlled-cooled rail which the road has laid during the last three years, rail specially processed to prevent the formation of shatter cracks within it during cooling, and which to date has not developed a true transverse fissure.

One of the most significant facts with regard to the rail defects that have been found on the road in the recent years as the result of repeat testing and the use of the most highly developed equipment, is that most of the defects have been detected in an earlier stage of their development, before they have reached the point where they present an imminent hazard. This, in itself, is a most important factor, because even though the total number of defective rail found in the recent years is greater than in the earlier years of testing, the safety factor of the track has been increased materially through the weeding out of these rails before their defects have developed to the point of possible danger.

Testing Procedure

Equally as interesting as are the records of rail inspections on the Missouri Pacific, are the thoroughness and efficiency with which the testing is done to secure the maximum degree of safety, while at the same time gaining maximum intensity of inspection at the lowest cost. As operated over the road by the regular Sperry inspection crew of three men, the detector car is accompanied by a conductor pilot and by a special representative of the chief engineer maintenance of way and structures, with the title of assistant engineer. In addition, each roadmaster accompanies the car over his territory, and the division engineers ride the car on their respective divisions to as large an extent as is consistent with their other duties.

The special representative of the chief engineer maintenance of way and structures is in direct charge of all testing and in co-operation with division transportation

department officers, arranges the detailed itinerary of the car on each operating division; selects the points of tie-up at night; gives succeeding division officers advance notice of the arrival of the car on their territories; keeps the required railroad car records of the tests and of the defective rails found; checks and signs the daily reports furnished the railroad by the chief operator of the car; submits daily reports to those designated to receive them; brings to the attention of the division trainmaster all traffic conditions which work to the disadvantage of the operation of the car, to the end that they may be overcome or avoided; and performs such other special duties as may be assigned to him by the system office which he represents.

Others who accompany the detector car while testing include two men on a motor car, who follow the inspection operation closely and are thus available to call up the section forces promptly to change out defective rails found, or to run other errands as may become necessary. These men are provided with white paint and a brush, with which rails to be removed from the track are branded with a broad stripe on their webs, and also with a track chisel and a sledge, by means of which each such rail is marked with a deep cross on the top of the head, about 8 in. back from each end.

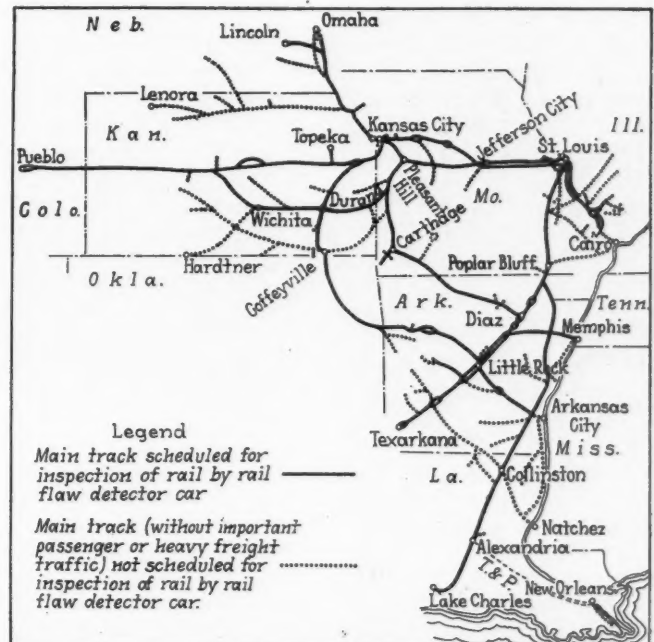
All Defective Rails Are Removed

In accordance with a specific rule, all rails indicated by the detector car as defective are given immediate protection upon the passage of the car, even though the defects are not visible, and if a transverse fissure is indicated, train speeds over it are restricted to 10 m. p. h. Only in exceptional cases are defective rails left in the track more than a few hours, the aim being to remove them as quickly as possible. Many of the defective rails removed, properly marked as defective, are made available for use in side tracks (except passing tracks), back of the clearance point, but all rails removed because of the presence of transverse fissures are broken at the point or points of defect and are scrapped immediately, their use being forbidden in any class of track.

Partially worn rail, held in reserve for the purpose, is

the time of the next scheduled trip of the detector car over the territory involved. Neither is an attempt made to test immediately new rail laid in out-of-face renewals, the first inspection of this rail being left until the first scheduled movement of the detector car over the territory in which it has been incorporated.

Every effort is made to prevent delays to the actual



Sketch Map of the Missouri Pacific Railroad, Showing in Full Heavy Lines the Main Tracks Scheduled for Inspection by the Flaw Detector Car Two or More Times Each Year

testing work and to see that it is carried out under the most favorable conditions. With the actual testing speed of the car in open track territory limited to approximately 7¾ m. p. h., and through frogs and switches to about 6 m. p. h., and with little control over the amount

Rail Inspection Data, Employing Rail Flaw Detector Car, on the Missouri Pacific Railroad

| Item | Year | | | | | | | | |
|---|----------|----------|----------|----------|----------|----------|----------|----------|-----------------|
| | 1939 | 1938 | 1937 | 1936 | 1935 | 1934 | 1933 | 1932 | 1931 (8 months) |
| Track miles of rail scheduled for inspection by rail flaw detector car | 4,210.62 | 4,211.55 | 4,211.55 | 4,212.34 | 4,216.98 | 4,181.38 | 4,181.38 | 4,181.38 | 2,787.73 |
| Track miles of rail inspected by rail flaw detector car | 9,073.49 | 8,719.53 | 8,065.26 | 8,703.43 | 8,884.50 | 5,769.89 | 6,347.33 | 6,187.76 | 4,014.76 |
| Intensity of rail inspection in scheduled territory.. | 215% | 207% | 192% | 207% | 210% | 138% | 152% | 148% | 144% |
| Number of days rail flaw detector car actually operated | 302 | 302½ | 282 | 293⅞ | 292⅞ | 220 | 235⅞ | 261 | 190 |
| Average track miles of rail inspected by rail flaw detector car per inspection day | 30.04 | 28.82 | 28.60 | 29.62 | 30.34 | 26.23 | 26.91 | 23.71 | 21.13 |
| Classification of defective rails located | | | | | | | | | |
| Transverse fissure | | | | | | | | | |
| Number | 644 | 731 | 584 | 538 | 371 | 311 | 312 | 305 | 267 |
| Per Cent of total | 43 | 34 | 38 | 30 | 27 | 27 | 27 | 20 | 15 |
| Average per track mile | 0.071 | 0.084 | 0.072 | 0.062 | 0.042 | 0.054 | 0.049 | 0.049 | 0.067 |
| Horizontal fissure | | | | | | | | | |
| Number | 287 | 693 | 323 | 335 | 239 | 245 | 359 | 313 | 678 |
| Per Cent of total | 19 | 32 | 21 | 17 | 17 | 21 | 32 | 21 | 39 |
| Average per track mile | 0.032 | 0.080 | 0.040 | 0.038 | 0.027 | 0.042 | 0.057 | 0.051 | 0.168 |
| Other defects | | | | | | | | | |
| Number | 556 | 745 | 636 | 997 | 786 | 615 | 469 | 877 | 799 |
| Per Cent of total | 38 | 34 | 41 | 53 | 56 | 52 | 41 | 59 | 46 |
| Average per track mile | 0.061 | 0.085 | 0.079 | 0.115 | 0.088 | 0.107 | 0.074 | 0.142 | 0.199 |
| Total defective rails | | | | | | | | | |
| Number | 1,487 | 2,169 | 1,543 | 1,870 | 1,396 | 1,171 | 1,140 | 1,495 | 1,744 |
| Average per track mile | 0.163 | 0.249 | 0.191 | 0.215 | 0.157 | 0.203 | 0.180 | 0.242 | 0.434 |
| Track miles of rail removed from track account flaws detected by detector car. (Average length 35 ft. per rail) | 4.93 | 7.19 | 5.11 | 6.20 | 4.63 | 3.88 | 3.78 | 4.95 | 5.78 |

used in the replacement of defective rail removed from the track. Since all of this rail has been inspected previously by the detector car in its original service location, no immediate check test is made of the individual rails as re-installed, these rails receiving their next inspection at

of time required to make the supplemental hand tests of defects indicated by the car, it is evident that the maximum number of miles tested each day can be achieved only through the most careful scheduling of the car movements in co-operation with the transportation depart-

ment to prevent unnecessary delays to its operation. To this end, the system office representative on the car works closely with the different division trainmasters as already mentioned, and also keeps the division superintendents informed of the progress being made on their territories through daily telegraphic reports.

Wherever possible, the most favorable conditions are set up for the operation of the car, and, at all times, the car crew is kept fully informed as to the movements of trains so that it can schedule the maximum inspection work between trains, with minimum idle waiting time or light running to or from points where it can clear the main track. By effective co-operation between roadway and transportation employees, the effective production of the car has been increased, as is evidenced in the fact that whereas the average number of track miles of rail inspected per day was not more than 26.2 in 1934, and had been as little as 23.7 miles in the first complete year of testing, the mileage inspected daily has increased almost steadily from 1934, reaching a maximum of 30.04 miles in 1939.

Former Less Effective Methods Abandoned

While the expense involved in the periodic testing of rail by the detector car is a considerable item, it is far from a totally new item of expense, replacing as it does large items of cost and losses involved in former methods of coping with the transverse fissure problem, methods which have been abandoned as no longer necessary. Among these former methods was the employment of trackwalkers, who covered every mile of main track daily on foot, a practice which is now deemed unnecessary and has given way to a daily motor car inspection of the track by section foremen. Likewise, with the adoption of periodic car testing of the rail, the former practice of keeping records of the heat numbers of all rails in track and of their specific locations, and of removing all rails of any specific heat in which more than four transverse fissures were found, was discontinued as no longer necessary. This latter practice, adopted initially as a safety measure with the knowledge that certain rail heats are more prone to the development of fissures than others, resulted in the replacing of a great many rails yearly, not because they showed any defects in themselves, but because of the possibility that they might be more susceptible to the development of defects than the other rails allowed to remain in the track.

Added to the large costs that were involved in keeping record of all rails in track and of replacing the large number annually that were considered as questionable, was the large economic loss through the shortened service life secured from these rails, which, regardless of their age, were relegated to only the least important tracks. With the periodic rail testing now employed, all of these costs and a large percentage of the losses have been done away with. At the same time, the safety of the rail in track has been greatly enhanced, which, in the final analysis, was the fundamental aim of the road in adopting its present practice of regular periodic testing with the most up-to-date rail flaw detector equipment.

All of the work of rail testing on the Missouri Pacific is being carried out under the immediate direction of A. A. Miller, chief engineer maintenance of way and structures.

THE PENNSYLVANIA has recently placed a new type of roomette-bedroom Pullman sleeping car on "The Akronite" and "The Cleveland" between New York and Akron, Ohio, and Cleveland to replace older type Pullman cars previously in service. The new cars, which are of the "Cascade" series, each contain ten roomettes and five double bedrooms.

D. & H. Installs Articulated Freight Locomotives

(Continued from page 213)

| | |
|--|--|
| Insulation, miscellaneous | Union Asbestos & Rubber Co., Chicago |
| Smokebox netting | The W. S. Tyler Co., Cleveland, Ohio |
| Stoker valves | The Lunkenheimer Company, Cincinnati, Ohio |
| | Locomotive Equipment Division of Manning, Maxwell & Moore, Inc., Bridgeport, Conn. |
| Stoker ball joints | Barco Manufacturing Co., Chicago |
| Stoker gage | Locomotive Equipment Division of Manning, Maxwell & Moore, Inc., Bridgeport, Conn. |
| Stoker | Standard Stoker Co., Inc., New York |
| Grates | Wauha Equipment Co., New York |
| Superheater; exhaust steam injector; Tangential steam dryer (1); pyrometer | The Superheater Company, New York |
| Dri-Steam valve(1) | Dri-Steam Valve Sales Corp., New York |
| Blow-off valves | The Lunkenheimer Company, Cincinnati, Ohio |
| Blow-off cocks | The Okadee Company, Chicago |
| Blower fittings | Barco Manufacturing Co., Chicago |
| Blower nozzle | T-Z Railway Equipment Co., Chicago |
| Boiler checks and injectors; coal sprinklers; safety valves | Locomotive Equipment Division of Manning, Maxwell & Moore, Inc., Bridgeport, Conn. |
| Arch-tube plugs; washout plugs | Huron Mfg. Co., Detroit, Mich. |
| Water column | American Locomotive Co., New York |
| Water gages | Talmadge Mfg. Co., Cleveland, Ohio |
| Water gages and gage cocks | Nathan Manufacturing Co., New York |
| Cab turret | Magnus Metal Div., National Lead Co., New York |
| Steam gages; air gages | Ashton Valve Co., Boston, Mass. |
| Steam-chest relief valves; globe and angle valves; steam circulator valves | The Lunkenheimer Company, Cincinnati, Ohio |
| Bell ringers | Railway Service and Supply Corp., Indianapolis, Ind. |
| Bell | National Bearing Metals Corp., St. Louis, Mo. |
| Chimes | Locomotive Equipment Division of Manning, Maxwell & Moore, Inc., Bridgeport, Conn. |
| Air-operating whistle equipment | Vilco Railway Equipment Company, Inc., Chicago |
| Sanders and sand spreaders.. | Graham-White Sander Corp., Roanoke, Va. |
| Sanders | The U. S. Metallic Packing Co., Philadelphia, Pa. |
| Headlights; marker and classification lamps | Pyle-National Co., Chicago |
| Clear vision windows; windshields | The Prime Manufacturing Co., Milwaukee, Wis. |
| Shatterproof glass | Pittsburgh Plate Glass Co., Pittsburgh, Pa. |
| Seats and cushions | Heywood-Wakefield Co., Gardner, Mass. |
| Mechanical lubricators | Detroit Lubricator Co., Detroit, Mich. |
| Hose, lubrication | Nathan Manufacturing Co., New York |
| Grease guns; Alemite fittings | Electric Hose & Rubber Co., Wilmington, Del. |
| Flexible ball joints; stoker-engine line; tender brake line and train brake between engine and tender; air-pump steam line and lubricator atomizer line between front and back engines | The Prime Manufacturing Co., Milwaukee, Wis. |
| Pring | Barco Manufacturing Co., Chicago |
| | Patterson Sargent Co., Cleveland, Ohio |
| | Montgomery-Ward Co., Baltimore, Md. |
| | E. I. du Pont de Nemours & Co., Wilmington, Del. |
| | Schenectady Varnish Co., Schenectady, N. Y. |
| Card holder | The Prime Manufacturing Co., Milwaukee, Wis. |
| Polished metal lacquer | Cook Paint & Varnish Co., North Kansas City, Mo. |
| Tender: Frame and trucks | General Steel Castings Corp., Eddystone, Pa. |
| Dust guards | MacLean-Fogg Lock Nut Co., Chicago |
| Truck boxes | National Malleable and Steel Castings Co., Cleveland, Ohio |
| Wheels | Bethlehem Steel Co., Bethlehem, Pa. |
| | Carnegie-Illinois Steel Corp., Pittsburgh, Pa. |
| Clasp and body brakes | American Steel Foundries, Chicago |
| Draft gear; side bearing | W. H. Miner, Inc., Chicago |
| Tank gage cocks | Nathan Manufacturing Co., New York |
| Tank valves; drain plugs ... | T-Z Railway Equipment Co., Chicago |
| Tank plate | Republic Steel Corporation, Cleveland, Ohio |
| | Bethlehem Steel Co., Bethlehem, Pa. |
| Hose | Goodall Rubber Co., Philadelphia, Pa. |
| | The B. F. Goodrich Co., Akron, Ohio |
| Pipe clamps, tender | Illinois Railway Equipment Co., Chicago |

Man Failure Causes Pennsylvania Accident

A BRIEF report of the head-on collision between a gas-electric rail motor car and a freight train, as a result of which 41 persons were killed, appeared in the *Railway Age* of August 3, page 193. Further investigation of the accident, which occurred on the Pennsylvania near Cuyahoga Falls, Ohio, on the evening of July 31, shows clearly that the cause of the disaster was the unexplained failure of the engineman to obey a meet order. The two trains involved were gasoline-powered motor car 4648, designated as train 3380, and

before proceeding beyond the meeting point on the main line, the motor car being approximately one mile beyond the meeting point when the accident occurred.

Meanwhile, the freight train involved, FC-4, running from Columbus to Cleveland, doubleheading, received orders at Arlington, Ohio, approximately four miles south of the scene of the accident to hold the main line in meeting the motor car at Switch No. 1 at Silver Lake and to proceed on the main track to Hudson after the meet was effected. The engineman of the lead engine of the freight train, who survived the collision, had no intimation that the motor car had disregarded its orders until he rounded a curve and saw the motor car proceeding toward him. He immediately took all the steps he could to avoid the accident, but his locomotive,



Forty-One People Died in This Blazing Coach After a Head-On Collision.

a freight train designated as FC-4. The motor car was equipped with a power control unit at each end, as it was engaged in shuttle service, and, at the time of the accident, was running with the passenger compartment at the front end, and with the baggage compartment at the rear. The motor car served as the Akron connection for passengers arriving at the junction, Hudson, Ohio, from both Cleveland and Pittsburgh. On the evening in question, a train from Cleveland arrived at Hudson at 5:40 p.m., and one from Pittsburgh at 5:42 p.m. The motor car left Hudson at 5:49 p.m. and was due to arrive at Akron at 6:10 p.m.

The single track line between Hudson and Akron, 12.8 miles long, is operated under the timetable, train order and manual block system, and before the departure of the motor car from Hudson the block operator at that point delivered a meet order to the crew of the motor car, instructing them to open Switch No. 1, just north of Silver Lake, Ohio, and go onto the siding to wait for the freight train FC-4 and further orders before again entering the main track and proceeding toward Akron. The motor car was in charge of Conductor Harry Shafer, Engineman T. L. Murtough, and Baggage-man Charles Bilderback, and it is the rule on the Cleveland division on which this accident occurred that the conductor shall acquaint all members of his crew with the train orders he receives. Whether this was done is not known, in view of the death or serious injury of the entire crew. In any event, the crew of the motor car not only disregarded its orders to stop at Silver Lake, but also violated another rigid rule in not obtaining permission from the block operator at Hudson

weighing 590,800 lb., plowed into the motor car and telescoped it, as shown in the accompanying photograph, and the motor car immediately caught fire.

Engineman Murtough and Conductor Shafer of the motor car were so badly injured that it has been impossible to obtain statements from them, while Baggage-man Bilderback was killed in the accident. Murtough was 49 years old, and apparently in excellent physical condition and the motor car was equipped with "dead-man control." Murtough was a regular engineman on this run, and the order issued on the day of the accident was by no means unusual, having been issued to another crew on the same run only the day before.

* * *



A New Western Maryland Caboose on Exhibit Track at the New York World's Fair

Conferees Agree On A New Wheeler-Lea Bill

WASHINGTON, D. C.

THE chances of the enactment into law of S. 2009, the omnibus transportation bill, became increasingly good when, after a series of conferences, the conferees announced on August 7 that they had agreed on a revised version of the controversial Harrington "labor-protection" amendment which would have the effect of limiting its provisions to a period of four years, had eliminated the Miller-Wadsworth minimum rate amendment, and had classified the Jones export agricultural rate amendment so as to make it provide that export rates should be granted to agricultural products on the same principle as they are now granted on industrial products. The conferees were unanimous in their approval of the new provisions, and Senator Wheeler said that railroad labor was satisfied with the new version of the Harrington amendment.

Early Congressional approval of the measure was seen when Conferee Lea stated that he would bring the new conference report up in the House on Monday, August 12, while Conferee Wheeler said he would call it up in the Senate at the earliest possible moment. Both men expressed the belief that the conference report would be speedily adopted.

Wadsworth Assails Lea

Simultaneously with the announcement of the agreement of the conferees came the release by Representative Wadsworth, Republican of New York, of a letter to his colleagues in the House in which he assailed Representative Lea for sending a letter to certain House members asking their opinions on the Harrington, Jones, and Miller-Wadsworth amendments and stating his own views, details of which were given in the *Railway Age* of July 20, page 118. In his letter Mr. Wadsworth called the conference committee's effort to eliminate his amendment "without precedent in legislative history" and "without the justification with which they try to endow it."

Specifically, the conferees approved the philosophy of the Harrington amendment which would have prohibited the Interstate Commerce Commission from approving any consolidation, combination, abandonment, pooling contract, division of traffic, and so forth, which would result in the displacement of railroad labor, but eliminated its application to abandonments and limited its effect to four years after the consolidation, merger, or pooling agreement had taken place. The following is the text of the amendment as approved by the conferees:

"As a condition of its approval under this paragraph (2), of any transaction involving a carrier or carriers by railroad subject to the provisions of this part, the commission shall require a fair and equitable arrangement to protect the interests of the railroad employees affected. In its order of approval the commission shall include terms and conditions providing that during the period of four years from the effective date of such order such transaction will not result in employees of the carrier or carriers by railroad affected by such order being in a worse position with respect to their employment, except that the protection afforded to any employee pursuant to this sentence shall not be required to continue for a longer period, following the effective date of such order, than the period during which such employee was in the employ of such carrier or carriers prior to the effective date of such order. Notwithstanding any other

provisions of this Act, an agreement pertaining to the protection of the interests of said employees may hereafter be entered into by any carrier or carriers by railroad and the duly authorized representative or representatives of its or their employees."

New Unification Language Included

The new version of the bill, because of the inclusion of the Harrington amendment in a modified form, also adopts substantially the unification provisions of the House bill, according to Conferee Lea. It specifically provides that "In passing upon any proposed transaction under the provisions of this paragraph (2), the commission shall give weight to the following considerations, among others: (1) The effect of the proposed transaction upon adequate transportation service to the public; (2) the effect upon the public interest of the inclusion, or failure to include, other railroads in the territory involved in the proposed transaction; (3) the total fixed charges resulting from the proposed transaction; and (4) the interest of the carrier employees affected."

Also, the present law is changed so that the commission is not required to follow any fixed plan of consolidation. This is done by failing to mention any plan or scheme of consolidation which must be adhered to by the commission.

In explaining the action of the conferees, Conferee Lea said that they had clarified the Jones amendment so as to make it provide that export rates should be granted to agricultural products on the same principle as they are now granted on industrial products. The original Jones amendment had provided that the export differential on agricultural products should be the same as that on manufactured goods, while the modified version would require the commission to adopt the same principle with regard to agricultural goods but not the exact differential. Thus, according to the conferees, more latitude is given the commission in determining the amount of the export differential. The following is the language of the modified Jones amendment:

"(1a) It is hereby declared to be the policy of Congress that shippers of wheat, cotton, and all other farm commodities for export shall be granted export rates on the same principles as are applicable in the case of rates on industrial products for export. The commission is hereby directed, on its own initiative or an application by interested persons, to make such investigations and conduct such hearings, and, after appropriate proceedings, to issue such orders, as may be necessary to carry out such policy."

As pointed out above, the conferees decided to delete the Miller-Wadsworth amendment which would have required the commission to permit any carrier to reduce its rates so long as the resultant charge remained compensatory after considering all elements of cost including overhead.

Representative Wadsworth's Letter

Representative Wadsworth began his letter by saying that it had recently come to his attention that on June 7, Mr. Lea had circulated a letter to several members of the House "in an effort to discover whether they could be swayed from their support of the instructions given our Managers when the Wheeler-Lea Transportation Bill (S. 2009) was recently recommitted to conference." He then pointed out to the House members that in that letter there appeared the following statement:

"The Wadsworth Amendment sets up an arbitrary minimum rate rule that if enforced would increase

freight rates on a large percentage of low-cost material that now moves at lower rates."

"That," wrote Representative Wadsworth, "is a concise statement of the inaccurate and erroneous explanations of the amendment which have been used by its opponents in their attempts to eliminate it from the bill, notwithstanding the fact that it was approved by both Houses of Congress."

"In the first place," the New Yorker continued, "the provision to which Mr. Lea refers sets up NO arbitrary minimum rate rule. It merely provides that the Interstate Commerce Commission SHALL PERMIT a carrier to reduce rates so long as those rates are compensatory. Its purpose is to prevent arbitrary rate increases being imposed upon low-cost carriers in order to benefit their high-cost competitors. While it clearly indicates that the Congress does not approve of widespread 'below cost' rates being used to destroy competition, it contains nothing which would or could be construed as requiring that all rates bear the same proportionate share of overall expenses. There has never come to my attention any meritorious criticism of the amendment or of the purpose it seeks to accomplish—the protection of the shipping public in their enjoyment of low-cost transportation. The attacks upon it have all been upon the theory that it will be construed as meaning something which it does not say, and which its authors did not intend."

Cites History of Amendment

"The best, and most completely convincing evidence of the fact that the amendment does not provide for any 'arbitrary minimum rate rule' as mistakenly asserted by Mr. Lea, is to be found in a study of the history of the amendment in the Senate, where it was sponsored by Senator Miller of Arkansas. As originally proposed by him, it contained another sentence, which would have set up a definite cost standard for minimum rates, and which read as follows:

"It shall be unlawful to establish rates for any type of transportation which shall not be compensatory, as herein defined, whether such rates are established to meet competition of other types of transportation or for other purposes."

Mr. Wadsworth went on to point out that had this sentence remained in the amendment, "the criticism of the railroads and Mr. Lea would be germane, even if not well-founded; but it was eliminated by Senator Miller himself when Senator Wheeler, author of the bill and in charge of it in the Senate, stated that he did not otherwise object to the amendment." In other words, according to Mr. Wadsworth, all of the criticism of this provision is based upon something which was once contained therein, but was stricken before the Senate adopted it, and was never even offered in the House.

"I therefore submit to the members of this body that the continued effort of the Conferees to strike from the bill a provision favorably acted upon by both Houses of Congress, is not only without precedent in legislative history, it is without even the justification with which they try to endow it," concluded the Representative's letter to his colleagues in the House.

ONCE-A-WEEK SERVICE over the Transandean railway between Chile and Argentina is now effective, according to the latest timetable issued by the Buenos Aires & Pacific. The service is rendered in connection with motor buses between Mendoza, Argentina, and Punta de Vacas. Sleeping cars are available for the through journey from Buenos Aires to San Juan, Argentina.

New Book . . .

High-Speed Freight Car Truck Tests: Report of tests conducted by the Association of American Railroads, Mechanical Division. 292 pages. 11 in. by 8½ in. Paper bound. Report available by addressing Secretary V. R. Hawthorne, 59 E. Van Buren street, Chicago. Price to members, \$2.50, non-members, \$5.00.

This report covers the most comprehensive series of freight-car truck tests ever conducted by the railroads, and full analysis of the detailed test data presented will unquestionably prove an important factor in developing truck designs better adapted to meet the exacting requirements of modern high-speed service. The tests constituted one of the formal research activities of the Association of American Railroads which authorized an expenditure of \$45,000 to cover their cost. Twelve different types of trucks were tested under actual operating conditions and more than 70 test runs were made at speeds as high as 85 miles an hour. Simultaneous tests were made for the purpose of determining the impact effects of the various trucks on the track structure. Information covering the general test procedure, individual trucks involved and test engineers in charge, was published in news items in *Railway Age* issues of June 24 and October 28, 1939.

An idea of the scope and general results of these important tests of freight-car trucks in high-speed service cannot be more clearly expressed than in the following quotation from the preface of the report:

"It is evident that the majority of the trucks were entered in this test more on faith in their performance at high speed than actual knowledge of it. No particular criticism can be attached to this since these test results show that the truck manufacturers did not have necessary information and test data upon which to base the design of trucks they submitted for high-speed freight service. With the data accumulated from these tests, based on different track, loads, wheels, speed, and design characteristics, manufacturers should be able to develop trucks that will perform satisfactorily in high-speed service.

"One of the outstanding facts developed in these tests is that snubbers, which have proved helpful in solving the problem of oscillation at normal freight-train speeds, are of little if any value at the high speeds reached in these tests.

"Spring systems for high-speed trucks must be lively and capable of making the wheels follow the rails with as little variation as possible in wheel pressure on the rail.

"There must be a certain amount of absorption in the spring system to dampen motion quickly and to take care of the periodic impulses encountered at lower speeds. This absorption must be kept within closer limits for high-speed trucks than for low-speed trucks.

"These tests show that soft springs are one of the requirements for a satisfactory high-speed truck.

"The restrictions in coupler heights and also the large variation between empty and fully loaded weights of freight cars place limitations on maximum spring travel which can be incorporated in freight trucks, but very few of the truck manufacturers took full advantage of the benefits to be derived from spring travel in designing their trucks.

"Proper lateral stability is very important from the standpoint of safety of operation at high speed.

"It appears from tests conducted and from observation during the time of the tests that some of the trucks would be satisfactory for high-speed service with minor modifications, while others would require extensive redesigning.

"The failure of any of these trucks to perform satisfactorily at speeds as high as 85 miles an hour does not condemn them for service at lower speeds.

"Any future A. A. R. tests made to determine performance of high-speed freight trucks should include the use of the same design of base truck that was used in these tests.

"No attempt has been made to rate the trucks since no useful purpose would be served by such a rating. This for the reason that doubtless most, if not all, of the truck manufacturers will redesign their trucks after analyzing the report and thus today's rating would be obsolete tomorrow."

Communications . . .

"RRs Are Ready" Folks Might Think This Over

TO THE EDITOR:

BIRMINGHAM, ALA.

Many articles in regard to the ability of the railroads to handle war traffic effectively. It seems to me that the one big thing to be considered in this connection is the large movement of traffic by truck and bus. If we should get on a war basis and it should be necessary to use every available man, it seems to me then it would be necessary to handle the truck and bus traffic by train. While I have no information as to relative man power to handle trains as compared with trucks and buses, this is so much in favor of the trains that in my opinion it is staggering.

It is not unusual for a train to handle 2500 tons exclusive of cars. How many trucks and how much gas would it take to handle this tonnage? To handle the same amount of tonnage as that handled by the Pennsylvania standard 125-car train over a hundred mile division, it would take a string of trucks of considerable length, as well as a whole regiment of truck drivers.

S. K. HAWKINS

A Reply to Col. Jenny

TO THE EDITOR:

NEW HAVEN, CONN.

In the gospel of St. Matthew, Chapter VII, the admonition is given to "first cast out the beam out of thine own eye and then shalt thou see clearly to cast out the mote out of thy brother's eye." This biblical quotation is prompted by the letter published in the *Railway Age* of June 29, page 1188, entitled "Railroads Declared to Be Unprepared for War," signed by L. Alfred Jenny, Lt. Col. Engrs. Reserve.

The "mote" of unpreparedness, if any, of the railroads may be compared with the "beam" of unpreparedness of the military establishment of which he signs himself as a reserve officer. Mr. Jenny's views may possibly be explained by the fact that he is not a member of the regular army staff, which appears to be satisfied that the railroads are well prepared, but is merely a reserve officer looking in from the outside and evidently wholly uninformed on the topic.

On April 26, 1940, Hon. Louis Johnson, then assistant secretary of war, in ceremonies at Washington, D. C., commemorating the formation of the Railroad War Board of 1917, said:

"We, in the War department, have full confidence in the innate capacity, in the co-operative spirit, in the ability, and in the patriotism of our railroads to cope successfully with the transportation problems that any grave military emergency would involve. Our faith is well founded.

"Railroad men have increased the efficiency of their plants with heavier rails, stronger ties, and more dependable signals. They have made tremendous strides in developing safety, in reducing time and in improving service to the public. They have added shop capacity to maintain equipment and they are making a serious effort to keep rolling stock up to the high standard that has already been established.

"Our army and our navy should be better prepared than they were in 1917-18 to handle and to distribute expeditiously the munitions which industry would turn over to them. They have vowed that never again will they permit the congestion of terminals and miles of railroad sidings with thousands of cars awaiting unloading.

"We have predicated our whole industrial mobilization program on the maintenance of the established American way of getting things done. Our railroads now have proved their ability and their capacity. Those who operate them know more about transportation than any substitutes who could be mobilized in the midst of a grave crisis. The army is not organized to run the railroads. It is honest enough to admit its own lack of

training and capacity. It does not want the job. Moreover, it is satisfied that the railroads under private management are always in a state of national defense and are admirably suited to transport men and munitions in time of war."

Nothing is closer to the truth than that the railroads are always in a state of national defense and prepared for any military emergency. Mr. Jenny cannot make his statements "without fear of successful contradiction" because any informed railroad man is prepared to contradict them quite successfully.

The A. A. R. officials are not "misleading our people" nor are they doing anything to "lull our people into a mistaken sense of security," but they are endeavoring to spread the truth as to the status of the railroads with reference to preparedness and to end the fallacies that have misled many people as totally uninformed on the subject as Mr. Jenny appears to be.

I believe there are many men in the War department who have first-hand knowledge of the actual requirements of a military operation close to a fighting zone and of the vast transportation which must precede such an operation. Surely, all such information is not locked up in the head of Mr. Jenny.

Mr. Jenny states that the "A. A. R. officials have stated that our railroads are prepared" and "in the next sentence they indicate that an equipment survey was being undertaken." There is no conflict here. The railroads are making every endeavor to be in a state of super-preparedness. Equipment surveys are conducted frequently. New equipment is being received continuously, fluctuating only with demands, more when better business is in prospect and less when business is declining and there is a surplus of such equipment. More equipment is always contemplated—more and more as requirements demand. Mr. Jenny says, "If our railroads are prepared, as they state, then they do not need to look into possible equipment shortages." This would indicate some thought in Mr. Jenny's mind that railroad equipment at some time should be in a standstill position. Nothing could be further from the truth. In fact, just the opposite is true. No industry has a better claim to the motto, "Off with the old, on with the new."

Railroads are continually buying new equipment to replace old equipment that is worn out or as it becomes obsolete or as it is no longer economical to keep in service or to meet increased traffic demands. The only equipment that is in the "blueprint stage" is equipment contemplated for some distant time in the future. Mr. Jenny has only to consult the pages of the *Railway Age* from time to time and, indeed, to follow the daily press—which he seems to have completely overlooked—to ascertain the rate at which cars and locomotives are being purchased continuously and the rate at which such deliveries are being made.

Surely as new cars and locomotives are delivered by the car builders to the railroads, they are beyond the "blueprint stage." Surely as tens of thousands of new cars are going through the shops for delivery to the railroads, they are beyond the "blueprint stage." Surely when specifications are out, bids are being taken, and contracts awarded and underlying materials under way and moving to the manufacturers, they are beyond the "blueprint stage." Why cannot Mr. Jenny be honest about this and frankly give the railroads credit not only for being prepared but doing all that a forward-looking prudent management can do to keep the railroads in a state of preparedness and to foresee and forestall any possible unpreparedness? The obvious "fate of the railroads" to those who understand the problem is that they will make a better showing in any military test under private management than was made under government operation during the World War.

Our railroads and equipment are not under-maintained in general, although there may be some slight evidences of that here and there throughout the nation, but taking the situation as a whole, they are maintained currently for the level of business they are called upon to handle. It is true that in depressed times there are always increased numbers of unserviceable cars and locomotives awaiting repairs and, no doubt, roadway maintenance programs are postponed and work not immediately necessary for the current volume of traffic is postponed. To be ready at all times on the instant to handle a large increase in traffic

that could not develop on the instant, would be an economic waste. To equate maintenance to traffic demands is an evidence of prudent management. To be ready suddenly to pick up such maintenance to meet increased traffic demands is an evidence of prudent management. In order to do just that, the railroads have very materially enlarged their buying, not only of new equipment but also of maintenance materials, since the European war started last September. Almost without exception every railroad in the country has on hand today—not under order, but on hand—large amounts of materials which can be applied immediately to unserviceable cars, locomotives and roadway as traffic demands increase. To be prepared, the railroads have purchased 30 per cent more maintenance materials this year than in the same period last year and their material inventories are \$40,000,000 greater than a year ago.

It is true that we have less units of equipment now than we had at the close of the last war, but their capacity is larger, they are more serviceable and dependable, the efficiency of their operation is much higher, and more service has been rendered since the World War by less cars and engines than was rendered during the World War with more cars and engines.

There were loaded in the boom year 1929, 8,236,000 more cars of freight than were loaded in the war year 1918, with 60,000 less cars and 5,000 fewer steam locomotives than were owned in 1918; as shown by the following:

Cars of Freight Loaded

| | |
|-----------|---------------------|
| 1918..... | 44,600,000 carloads |
| 1929..... | 52,800,000 " |
| 1939..... | 34,100,000 " |

In each year from 1923 to 1930, inclusive, the railroads handled more cars of freight than in 1918:

| | |
|--------------|---------------------|
| 1918..... | 44,600,000 carloads |
| Minimum..... | 45,877,000 in 1930 |
| Maximum..... | 53,100,000 in 1926 |

Since 1923 there have been no car shortages, the speed of freight trains has been increased over 50 per cent from 10.9 miles per hour in 1923 to 16.6 miles per hour in 1938, the average capacity of freight cars has increased approximately 25 per cent and the number of gross ton-miles per train hour have risen from 16,764 in 1923 to 31,138 in 1938. More than 1,768,000 freight cars and 40,000 locomotives have been destroyed as obsolete and over 1,000,000 new cars and 16,000 new locomotives have been added.

The numbers of freight cars and locomotives owned are less than at the high points of ownership, but increases in the capacities of cars and locomotives, and improvements in speed of movement and efficiency have been so great during this period that the freight traffic in 1929 could now be handled with fewer cars than were required at that time. It is evident, therefore, that any comparison of the capacity of the railroads today with any previous period, based only on units of equipment owned, is very misleading, unless the greatly increased capacity of present-day equipment and efficiency of present-day operations are taken into consideration.

Railroad men who have had military experience will thoroughly disagree with Mr. Jenny's statement that "for a military operation in a fighting zone it is not the capacity that counts, but the number of locomotives and cars available." Capacity will always count.

Should "the actual requirements of a military transportation close to a fighting zone" develop within the areas served by American railroads, they will be well able to meet them. Such requirements will not develop overnight. They must be a gradual development, however rapid it might be. They could not possibly be general all over the United States at one time, unless history has something most unusual in store for us and even that situation would develop gradually, with time for preparation.

But dismissing for the moment the most improbable and practically impossible condition of a fighting zone spread over nearly 3,000,000 square miles, and confining ourselves to the actual sites of one or even several fighting zones, the time of development of the emergency at each zone would certainly be sufficient to permit the railroads, acting as a unit under the Association of American Railroads, to assemble enough cars and

locomotives to develop track capacity to the full at the points of emergency.

Mr. Jenny is quite evidently not familiar with the size of the job the railroads are doing every day, the fluctuations in traffic that are successfully met continuously, or the relation of the World War movement to the basic railroad load. In 1914, Class I railroads of the United States performed 284 billion freight ton-miles of transportation service, including the weight of cars and locomotives, and in 1918, at the height of the war movement, 405 billion, an increase of 121 billion, or 42.6 per cent. In 1929, however, the railroads handled 447 billion freight ton-miles, an increase of 42 billion, more than 10 per cent, in excess of that handled during the high war year of 1918, which demonstrated their capacity to handle in peace times a much greater movement than during the World War.

In 1939, the railroads rendered 333 billion freight ton-miles of service. If there should be the same increase of 42.6 per cent above 1939 traffic that took place between 1914 and 1918, the total would be only 6 per cent more than was actually handled in 1929.

The statistical department of the Association of American Railroads has calculated that the increase in revenue ton-miles (not including the weight of the cars and locomotives, as distinguished from total ton-miles, in which are included the weight of cars and locomotives) handled in 1918 over that handled in 1916, the year before the war, amounted to 12 per cent and this has been termed the "war load," there being no other definite figure available.

From 1917 to December 31, 1939, the railroads moved 15,756,981 men for the government and 25,953 special trains, an average movement of 492,405 per month, out of a total of all passengers in the United States of over 3 billion during that period. Thus the actual number of passengers handled for the government during that period was less than one-half of one per cent of the total passengers handled. The maximum movement of troops was reached in July, 1918, when 1,147,013 men were moved in 2,055 trains, each train moving an average of 759 miles, which was a much greater distance than the average of the railroads' other passenger traffic. During that period the railroads handled 118 billion passenger-miles, of which the troop movement amounted to 7 billion passenger-miles, less than 6 per cent of the total passenger transportation of the American railroads in that period.

The heaviest troop movement took place in 1918, during which year the American railroads handled 42.7 billion passenger-miles, but in 1920, with substantially no troop movements, the railroads handled 10 per cent more passenger-miles—a total of 46.8 billion. It was in that year that the great trend of passengers from the railroads to the highways set in and has progressed continuously to date. During 1939 all of the railroads produced 22.7 billion passenger-miles, slightly less than half the amount performed in 1920, which would indicate that to handle the same movement of troops as was handled during the World War, would increase the passenger-miles of the American railroads only 10 per cent above the volume that was handled in 1939, and the total passenger traffic, including such volume of troop movements, would be only about 60 per cent of the passenger traffic actually handled by the railroads in 1918, and only 54 per cent of the maximum actually handled by the railroads in 1920.

The railroads of today are vastly different from the railroads that were confronted with this same situation at the outbreak of the World War in 1914 and our entry into it in 1917. Ten billion dollars have been spent for improving and enlarging the railroads in the intervening two decades. They now have larger, better and faster locomotives; larger and better freight and passenger cars; movements are much faster; track, bridge and signal structures are stronger and more dependable; terminals are more adequate; morale of the personnel is better; supervision has been streamlined; and last, but not least, the railroads have the benefit of the experience during the last emergency—an unusual happening of two emergencies in one generation of railroad operators.

The railroads were not prepared for the standstill situation imposed upon their cars by shippers of freight during 1917 and 1918. At one time 200,000 cars were standing still in terminals on the Atlantic seaboard because no arrangements had been made for unloading them. Some materials arrived in New

York harbor on freight cars consigned to ships that had not yet been launched; anchors for ships were delivered at a ship building yard for which the keels had not yet been laid. The extent of this standstill situation is best indicated by the fact that the accumulation of cars waiting for ships on the Atlantic seaboard occupied about 1,800 miles of railroad terminal and yard tracks—a distance approximately equal to the entire mileage of all lines operated by the New Haven Railroad system.

The record clearly indicates that if the railroads are used for movement and not for the storage of freight, they will be ready to meet any military emergency that may arise.

C. E. SMITH,
Vice-President, New York, New Haven & Hartford

Is Government to Blame For "Disunity" of Railroads?

NORTH CAROLINA

TO THE EDITOR:

In your editorial (July 6th, page 3) you say "Neither Colonel Wilgus nor any one else can point out a single difficulty of the railways which is not traceable to some government policy and which could not be removed by correcting that policy." It seems that one "fundamental difficulty" of the railways today is their failure among themselves to create a central authority with effective power to correct abuses, brought about by competitive conditions.

Colonel Wilgus in his address makes reference to this, when he says:

"A disunited system of railways will no more succeed in its aim to protect the interests of the nation, than did our confederation of states politically before we became the United States." He adds the charge:

"The Association of American Railways, as now constituted, is without power to enforce its decrees."

In other words, the railways do not yet seem to have waked up to the fact that if they "don't all hang together, they will all hang separately."

How then do you connect this "fundamental difficulty" with government policy?

Not that I am arguing for government ownership, or control; being wholeheartedly in sympathy with your general argument against such a policy. But so long as the railways fail to put their house in order, by delegating to some executive organization authority to correct competitive or other abuses, which are costing the railways as a whole substantial sums, so long will they lay themselves open to criticism, as being disunited and therefore incapable of serving the nation effectively in the crisis now at hand.

"CASABIANCA"

The railroad industry, left to its own devices, would be, at least to a considerable degree, a "natural" monopoly. That is, better and more economical service (i. e., more grade reductions and heavier train loading, and greater frequency of schedules) can be provided when there are relatively few railroads in a given region than when there are a large number competing with each other.

The railroads, obeying this "natural" tendency, were rapidly unifying into large systems back in the early 1900's when the Supreme Court, by a 5 to 4 decision in the Northern Securities Case, applied the Sherman Anti-Trust Act to the railroads to prevent such consolidations. Since that time, the relatively few consolidations which have occurred (and the I. C. C. consolidation plan as drawn up following the instructions of the Transportation Act of 1920) have been on the "end-to-end" rather than the "regional" basis. That is, such consolidations have not reduced competition in the direction of the "natural" tendency, by the operation of which the railroads could maximize their use of large-scale-production methods to reduce costs and improve service.

The prevalence of monopoly is the only excuse for regulation of the railroads and yet the regulators have used their powers to preserve and promote competition—the persistence of which deprives regulation of its reason for existence.

Railroad managements are made up of intelligent and active

American citizens, not a breed different from the managers of other industries. It follows, consequently, that if and when weaknesses are detected in railway management which do not exist in managements of other industry, the cause must be sought in the inconsistent and peculiar regulatory policy which is applied to the railroads and to no other industry.

For instance, would not a strong association policy for the industry be manifestly easier to achieve if we had fewer railroads and less inter-railroad competition than is the present case with a multitude of railroads, competing to the maximum with each other? This is the question our correspondent raises. Our answer is that the difficulty the A. A. R. finds in adopting and enforcing strong policies arises from the large number of independent and competing railroads—and that there would not be such a multitude of competitors (finding it difficult to agree upon strong united action) if the "natural" tendency toward a higher degree of consolidation had not been arrested by government policy.

A government in Washington with an experienced and capable business man at its head should be able to comprehend quickly the government policies which have made effective conduct of the railroad business difficult, if not impossible; and such a government should be able quickly to correct these anti-social policies.

We do not believe that the handicaps placed by short-sighted public policy in the path of railroad efficiency excuses railway managements from the effort to overcome these handicaps. Nevertheless, if there is an epidemic of hot-boxes because somebody is throwing sand into them—the logical remedy is to stop the sand-throwing rather than to improve lubrication; although the latter, of course, is necessary unless and until the sand-thrasher can be restrained.—EDITOR.

How Far Can Steam Passenger Locomotives Run?

DENVER, COLO.

TO THE EDITOR:

We have recently discontinued a stop on our train No. 6 at Green River, Utah, where we formerly conditioned the engine on this train. We now run the engines through on No. 6 between Helper, Utah, and Grand Junction, Colo., 177 miles, without a stop of any kind. These are M-68 class engines of the 1800 series. I am wondering if this is unusual so far as non-stop operation of steam locomotives is concerned, or whether you have information indicating that this is not the record non-stop run for steam locomotives in regular service.

L. F. WILSON,
Assistant General Manager
Denver & Rio Grande Western

[EDITOR'S NOTE—An almost identical run, so far as distance is concerned, is that of the locomotives of the Twentieth Century Limited on the New York Central, which run non-stop between Buffalo, N. Y., and Collinwood, Ohio, 177.1 miles. We would be glad to hear of other long non-stop runs with steam locomotives in regular service.]

* * *



A View of the Concourse of the Jersey Central's Passenger Terminal at Jersey City, N. J. The Stainless-steel "Crusader" is About to Depart for Philadelphia

NEWS

I. C. C. Asks Light on Trainload Gas

Reopen midcontinent case for data on cost and value of c. l. vs. trainload service

The Interstate Commerce Commission has reopened its No. 28106 proceeding wherein Examiner C. E. Stiles' recently-issued proposed report recommended the establishment of trainload rates on gasoline and natural gasoline from mid-continent origin points to eight destinations in Western Trunk Line territory which are pipe-line terminals and has assigned it for further hearing before Examiner Stiles at the Skirvin Hotel in Oklahoma City, Okla., on October 9. Oral argument on the proposed report in the case, which is docketed as *Petroleum Rail Shippers' Association v. Alton & Southern Railroad et al.*, was heard before the full commission on July 18, details of which were given in the *Railway Age* of July 27, page 156.

In its order of August 1, reopening the case, the commission informs the parties that in addition to such other new evidence as they may desire to offer, it desires that when the record is closed and briefs have been filed it shall have information and the views of the parties on the following matters:

(a) The difference in cost to the carriers and value to the shippers of the service when rendered under single-carload rates and when rendered under rates applicable on units of not less than 25 tank-car loads of not less than 8,000 gallons, shipped under one bill-of-lading from one consignor over one route to one consignee at one time.

(b) If multiple-car rates are prescribed to gasoline pipe-line terminal points only, whether (1) they should be required to be made applicable at intermediate points, or (2) relief should be granted under the long-and-short-haul clause and/or the aggregate-of-intermediates clause of the fourth section.

(c) If multiple-car rates are prescribed, whether they should be prescribed to other than gasoline pipe-line terminals and intermediate points.

(d) Views upon the question whether the spread between single-car rates and multiple-car rates should be controlled entirely by the difference in cost of rendering the two services, or whether other considerations ordinarily entering into rate-making should enter into the determination of that spread. Those other considerations embrace such matters as value of

the service to the shipper, including evidence of what the traffic can bear, condition of the industry, effect of rates on the movement of traffic, and relation of freight rates to value of the commodity, etc.

(e) The reasonableness of the gasoline pipe-line rates, including cost to the carriers of transportation, valuation of the gasoline pipe-line properties, and reasonableness of the minimum tender of 25,000 barrels.

Practitioners to Meet at Chicago

The Association of Practitioners Before the Interstate Commerce Commission will hold its annual meeting at the Palmer House, Chicago, on October 10 and 11.

Midwest Board Raises Estimate of Car Needs

The Midwest Regional Advisory Board on August 1 raised its forecast of car requirements for the third quarter of 1940 from 873,065 cars estimated on June 21 to 892,810 cars.

C. & O. Booklet Treats Phone Calls As Opportunities

The Chesapeake & Ohio, Nickel Plate and Pere Marquette have jointly prepared an eight-page booklet to acquaint their personnel with effective handling of the four million telephone calls which, it is estimated, the officers and employees of the three roads make and receive each year. Entitled "Four Million Opportunities," the booklet first lists some points "for a better telephone personality" when making calls and receiving calls; then presents some good general rules and finally gives diagrammatic instructions as to the placement of the telephone mouth-piece.

Export Packing

Bruce Berckmans, acting director of the Bureau of Foreign and Domestic Commerce, has announced the publication of a new handbook entitled "Modern Export Packing" which covers the entire field of packing for export to serve as a guide to American manufacturers and shippers.

The new book, says the Department of Commerce statement, "presents the results of a nation-wide study of all phases of packing and provides the most comprehensive description of current export packing methods that is available today." It adds that "while designed especially for general use in export trade, the fundamental principles described and illustrated throughout the book are applicable to domestic packing and should be of distinct value to shippers engaged in domestic trade."

Favors 44-Hour Week for R. E. A.

'Fact finders' omit accounting employees, train messengers from short week scheme

The emergency fact-finding board recently appointed by President Roosevelt to investigate the controversy between the Railway Express Agency and the Brotherhood of Railway Clerks submitted its report to the White House on August 2, and recommended that the 44-hour week be extended to all employees except those in the accounting division and the general offices and the train messengers. Also, the board, which was composed of John P. Devaney, chairman and former chief justice of the Minnesota Supreme Court; Dexter M. Keezer, president of Reed College, Portland, Oregon; and Harry A. Millis, professor of economics and sociology at the University of Chicago, refused to consider the revision of working rules which had been proposed by both sides, holding that this dispute should be worked out by the parties under section 2, second, of the Railway Labor Act.

The report brings to a close the work of the board which was appointed on July 10 by President Roosevelt to determine the issues involved in the threatened strike by the Clerks. The issues in the controversy were detailed in the *Railway Age* of July 20, page 109, while the testimony at the week of hearings was outlined in the issues of July 27, page 162, and August 3, page 189. Briefly, it may be said that the dispute arose after the Agency had granted a 44-hour week to the Brotherhood of Teamsters which represents the vehicle drivers in eight of the country's largest cities. The Clerks refused an offer of the R. E. A. to grant a 44-hour week to their vehicle drivers in eight other comparable cities, and asked a 44-hour week and certain revisions in the working agreement for all the employees of the Express Company. After both sides had been unable to mediate the situation and the Clerks had refused to arbitrate the issue, a strike was called for July 12.

Specifically, the board found that "platform and depot foreman, warehouse and platform clerks, warehouse and platform laborers, truckers, carloaders, and others functioning in a coordinated way in handling incoming and outgoing shipments, as well as vehicle employees, should be granted the 44-hour week without reduction in compensation." It did not find that the 44-hour week should be extended to

employees in the accounting division and the general offices; nor did it find that it should be extended to train messengers because they are a separate group and their work is of such a nature that hours actually worked are not easily controlled. The board felt that the impact of a reduction in hours in their case would be relatively heavy.

The board does not regard it as constructive or proper to draw a line between vehicle employees and platform and depot foremen, warehouse and platform clerks, warehouse and platform laborers, and others down to and including carloaders, engaged in the handling and care of incoming and outgoing express shipments of express matter. It goes on to explain that with one seniority roster as the very general rule, with the occupational changes in filling positions and in making reassignments of jobs, with frequent combination jobs, and with membership carried in the same local lodges, "to draw any such line between or among them is to place a tax on needed mobility, to begot the placing of limits on the kind of work that may be done by this and that occupational group, and to create dissatisfaction and a costly bad morale."

The board attaches no blame to the Agency for entering into the national agreement with the Teamsters, the chief effect of which was to grant the 44-hour week to all vehicle employees within the jurisdiction of that organization. Yet the history of collective bargaining in the express service being what it has been, and the situation being what it was, the board feels that a problem was created by that agreement which requires "a constructive solution."

"At the very minimum," says the board, "the 44-hour week must now be granted to all vehicle employees within the jurisdiction of the clerks, without reduction in compensation. The former policy of equal treatment of comparable members of the two labor organizations is called for. No drawing of a line between the employees working in larger and employees working in smaller places, such as has been suggested by the Agency is practicable or feasible."

Under the Railway Labor Act 30 days must now elapse before any strike action can be taken, but during this period both sides may enter into further negotiations to work out an agreement based either wholly or in part on the board's findings.

Senate Approves Rail Loan Compromise Bill

The Senate has passed the House-approved bill, H. R. 10014, which would amend the Transportation Act of 1920 to permit the Secretary of the Treasury to make compromise settlements of amounts due from railroads on loans made under section 210 of that act.

C. N. R. Air Subsidiary Inaugurates Detroit-Toronto Service

Trans-Canada Air Lines, a Canadian National subsidiary, inaugurated a new plane service between Detroit, Mich., and Toronto, Ont., on August 1. The new 195-mile route extends from the Windsor

(Ont.) airport (across the river from Detroit) to Toronto for regular passenger, mail and express service and makes direct connections at Detroit for Chicago and at Toronto for Ottawa, Montreal, Que., the Maritime provinces and the Canadian west. Two round-trips are scheduled daily, with a stop at London, Ont.

The new line brings the total route-mileage of Trans-Canada to almost 4,000 miles.

B. & O.'s Capitol Limited to Carry Coaches

Streamlined, reclining seat coaches were added to the hitherto all-Pullman Capitol Limited of the Baltimore & Ohio, effective August 4. The new equipment includes a new-style buffet-coach-lounge of-

fering club car appointments and services. The Capitol Limited, which has carried only Pullman cars since its inauguration in May, 1923, will continue to offer to its Pullman passengers the customary services of train secretary, barber-valet, maid-manicure, and radio, and its schedule between Washington, D. C., and Chicago remains unchanged.

Roads Report Income of \$3,843,171 in May

Class I railroads reported a May net income after fixed charges of \$3,843,171 as compared with a deficit of \$18,315,076 in May, while 67 reported net deficits; in Commerce Commission's monthly compilation of selected income and balance sheet items. The deficit for this year's first five

SELECTED INCOME AND BALANCE-SHEET ITEMS OF CLASS I STEAM RAILWAYS

Compiled from 132 Reports (Form IBS) Representing 137 Steam Railways
(Switching and Terminal Companies Not Included)

TOTALS FOR THE UNITED STATES (ALL REGIONS)

| For the month of May | | For the five months of | |
|---|--------------|------------------------|-----------------|
| 1940 | 1939 | 1940 | 1939 |
| Income Items | | | |
| \$47,076,826 | \$25,172,742 | \$196,006,804 | \$126,456,430 |
| 11,155,213 | 10,750,235 | 54,258,938 | 53,401,744 |
| 58,232,039 | 35,922,977 | 250,265,742 | 179,858,174 |
| 2,017,801 | 1,712,206 | 10,653,325 | 9,784,679 |
| 56,214,238 | 34,210,771 | 239,612,417 | 170,073,495 |
| 11,859,397 | 11,872,030 | | |
| 38,417,187 | 38,560,027 | | |
| 128,703 | 132,624 | | |
| 50,405,287 | 50,564,681 | | |
| 5,808,951 | *16,353,910 | | |
| 1,965,780 | 1,961,166 | | |
| 3,843,171 | *18,315,076 | | |
| 17,159,010 | 16,882,695 | | |
| 3,934,931 | 1,192,335 | | |
| 16,679,721 | 13,719,687 | | |
| 3,962,660 | 3,957,670 | | |
| Income Items | | | |
| 1. Net railway operating income | | \$196,006,804 | \$126,456,430 |
| 2. Other income | | 54,258,938 | 53,401,744 |
| 3. Total income | | 250,265,742 | 179,858,174 |
| 4. Miscellaneous deductions from income | | 10,653,325 | 9,784,679 |
| 5. Income available for fixed charges | | 239,612,417 | 170,073,495 |
| 6. Fixed charges: | | | |
| 6-01. Rent for leased roads and equipment | | 55,269,453 | 55,205,209 |
| 6-02. Interest deductions† | | 191,885,461 | 193,152,334 |
| 6-03. Other deductions | | 647,514 | 666,165 |
| 6-04. Total fixed charges | | 247,802,428 | 249,023,708 |
| 7. Income after fixed charges | | *8,190,011 | *78,950,213 |
| 8. Contingent charges | | 9,831,597 | 9,808,536 |
| 9. Net income‡ | | *18,021,608 | *88,758,749 |
| Selected Asset Items | | | |
| 10. Depreciation (Way and structures and equipment) | | 84,911,946 | 84,145,194 |
| 11. Federal income taxes | | 15,243,730 | 7,342,568 |
| 12. Dividend appropriations: | | | |
| 12-01. On common stock | | 34,747,022 | 32,220,744 |
| 12-02. On preferred stock | | 9,228,076 | 8,773,876 |
| | | Balance at end of May | |
| | | 1940 | 1939 |
| 13. Investments in stocks, bonds, etc., other than those of affiliated companies (Total, Account 707) | | \$613,174,300 | \$644,666,948 |
| 14. Cash | | 478,320,131 | 414,186,238 |
| 15. Demand loans and deposits | | 24,105,863 | 13,666,709 |
| 16. Time drafts and deposits | | 26,497,224 | 20,225,054 |
| 17. Special deposits | | 147,620,976 | 48,386,349 |
| 18. Loans and bills receivable | | 3,895,912 | 2,978,720 |
| 19. Traffic and car-service balances receivable | | 61,517,508 | 51,153,644 |
| 20. Net balance receivable from agents and conductors | | 46,762,896 | 47,542,154 |
| 21. Miscellaneous accounts receivable | | 120,382,427 | 115,353,961 |
| 22. Materials and supplies | | 359,890,016 | 324,177,087 |
| 23. Interest and dividends receivable | | 23,889,633 | 21,665,038 |
| 24. Rents receivable | | 1,548,230 | 1,398,079 |
| 25. Other current assets | | 5,494,382 | 4,411,393 |
| 26. Total current assets (Items 14 to 25) | | \$1,299,925,198 | \$1,065,144,426 |
| Selected Liability Items | | | |
| 27. Funded debt maturing within 6 months§ | | \$167,102,433 | \$169,632,358 |
| 28. Loans and bills payable | | 177,704,554 | 212,508,953 |
| 29. Traffic and car-service balances payable | | 77,337,778 | 67,690,745 |
| 30. Audited accounts and wages payable | | 241,187,929 | 231,803,082 |
| 31. Miscellaneous accounts payable | | 62,426,280 | 60,855,712 |
| 32. Interest matured unpaid | | 26,525,207 | 25,563,170 |
| 33. Dividends matured unpaid | | 1,491,946 | 1,510,757 |
| 34. Unmatured dividends declared | | 27,211,244 | 16,812,861 |
| 35. Unmatured interest accrued | | 94,339,934 | 95,479,251 |
| 36. Unmatured rents accrued | | 30,776,887 | 31,392,698 |
| 37. Other current liabilities | | 100,358,257 | 28,497,577 |
| 38. Total current liabilities (Items 28 to 37) | | \$839,360,016 | \$772,114,806 |
| 39. Tax liability (Account 771): | | | |
| 39-01. U. S. Government taxes | | 74,382,709 | 51,489,046 |
| 39-02. Other than U. S. Government taxes | | 134,823,620 | 148,822,344 |

* Deficit or other reverse items.

† Represents accruals, including the amount in default.

‡ For 99 railroads not in receivership or trusteeship the net income or deficit was as follows: May 1940, \$14,652,579; May 1939, \$4,954,226; 5 months 1940, \$33,019,124; 5 months 1939, \$26,581,443.

§ Includes payments of principal of long-term debt (other than long-term debt in default) which will become due within six months after close of month of report.

¶ Includes obligations which mature not more than 2 years after date of issue.

‡ 1939 figures for certain liability items have been revised, for comparative purposes, to conform with changes prescribed in the Uniform System of Accounts by Commission's order of December 6, 1939, effective January 1, 1940.

NET INCOME OF LARGE STEAM RAILWAYS

(Switching and Terminal Companies Not Included)

| Name of railway | Net income after deprec. | | Net income before deprec. | |
|---|-----------------------------|-----------|-----------------------------|------------|
| | For the five months of 1940 | 1939 | For the five months of 1940 | 1939 |
| Alton R. R. | \$1,045,509 | \$914,825 | \$937,277 | \$807,891 |
| Atchison, Topeka & Santa Fe Ry. System† | 2,277,805 | 4,484,558 | 2,652,166 | 445,847 |
| Atlantic Coast Line R. R. | 281,567 | 812,742 | 570,414 | 1,688,989 |
| Baltimore & Ohio R. R. | 2,030,007 | 6,072,089 | 960,338 | 3,078,760 |
| Boston & Maine R. R. | 384,639 | 626,854 | 220,454 | 22,496 |
| Central of Georgia Ry.‡ | 926,378 | 1,190,532 | 570,474 | 835,404 |
| Central R. R. of New Jersey§ | 1,516,851 | 1,699,737 | 932,060 | 1,116,175 |
| Chesapeake & Ohio Ry. | 13,357,019 | 3,307,256 | 16,870,588 | 6,747,925 |
| Chicago & Eastern Illinois Ry.§ | 839,040 | 809,070 | 586,898 | 561,671 |
| Chicago & North Western Ry.§ | 6,314,090 | 8,405,819 | 4,453,604 | 6,341,626 |
| Chicago, Burlington & Quincy R. R. | 1,362,510 | 1,229,336 | 816,044 | 933,674 |
| Chicago Great Western R. R.§ | 475,131 | 483,616 | 241,259 | 259,424 |
| Chicago, Milwaukee, St. Paul & Pacific R. R.§ | 6,369,252 | 8,982,947 | 3,905,405 | 6,571,716 |
| Chicago, Rock Island & Pacific Ry.§ | 4,564,732 | 5,368,387 | 2,846,781 | 3,656,205 |
| Chicago, St. Paul, Minneapolis & Omaha Ry. | 1,420,495 | 1,557,976 | 1,183,870 | 1,315,995 |
| Delaware & Hudson R. R. | 345,227 | 497,140 | 784,583 | 920,619 |
| Delaware, Lackawanna & Western R. R. | 490,343 | 553,458 | 520,357 | 463,474 |
| Denver & Rio Grande Western R. R.§ | 2,567,481 | 2,797,222 | 2,048,436 | 2,293,205 |
| Elgin, Joliet & Eastern Ry. | 815,584 | 461,184 | 1,211,823 | 866,260 |
| Erie R. R. (including Chicago & Erie R. R.)¶ | 1,664,476 | 2,351,204 | 150,916 | 819,256 |
| Grand Trunk Western R. R. | 101,543 | 1,305,209 | 596,314 | 820,171 |
| Great Northern Ry. | 1,583,714 | 4,332,850 | 48,285 | 2,789,006 |
| Illinois Central R. R. | 1,127,212 | 1,065,640 | 1,528,400 | 1,694,072 |
| Lehigh Valley R. R. | 738,730 | 52,350 | 132,296 | 833,809 |
| Long Island R. R. | 1,550,471 | 1,319,882 | 1,063,504 | 829,537 |
| Louisville & Nashville R. R. | 2,866,842 | 763,006 | 4,675,248 | 2,568,095 |
| Minneapolis, St. Paul & Sault Ste. Marie Ry.§ | 2,605,665 | 3,531,100 | 2,094,859 | 3,023,569 |
| Missouri-Kansas-Texas Lines | 1,692,997 | 1,931,507 | 1,194,008 | 1,374,668 |
| Missouri Pacific R. R.§ | 5,956,031 | 7,155,231 | 4,084,719 | 5,339,285 |
| New York Central R. R.¶ | 1,381,079 | 8,787,191 | 5,245,449 | 2,189,220 |
| New York, Chicago & St. Louis R. R. | 546,439 | 154,726 | 1,208,203 | 500,788 |
| New York, New Haven & Hartford R. R.§ | 2,717,437 | 2,156,006 | 1,341,854 | 744,873 |
| Norfolk & Western Ry. | 12,926,889 | 6,414,171 | 15,509,902 | 8,502,880 |
| Northern Pacific Ry. | 2,046,205 | 4,574,463 | 645,567 | 3,163,956 |
| Pennsylvania R. R. | 9,272,069 | 2,296,224 | 20,439,476 | 13,244,354 |
| Pere Marquette Ry. | 587,889 | 505,927 | 1,541,603 | 481,941 |
| Pittsburgh & Lake Erie R. R. | 1,270,592 | 326,204 | 2,182,167 | 1,260,817 |
| Reading Co. | 1,855,038 | 1,197,830 | 3,151,000 | 2,493,984 |
| St. Louis-San Francisco Ry.§ | 4,858,403 | 5,241,012 | 3,590,091 | 3,960,168 |
| St. Louis, San Francisco & Texas Ry. | 185,861 | 173,363 | 185,722 | 173,016 |
| St. Louis Southwestern Lines§ | 238,269 | 815,397 | 26,091 | 557,752 |
| Seaboard Air Line Ry.‡ | 1,737,345 | 2,179,572 | 769,006 | 1,284,162 |
| Southern Ry. | 468,143 | 598,391 | 1,938,419 | 832,051 |
| Southern Pacific Transportation System‡ | 4,569,606 | 4,814,230 | 1,261,487 | 1,526,377 |
| Texas & Pacific Ry. | 412,442 | 136,367 | 917,260 | 636,596 |
| Union Pacific R. R. (including leased lines)¶ | 2,495,433 | 1,562,251 | 5,650,727 | 4,678,216 |
| Wabash Ry.‡ | 1,884,767 | 2,553,798 | 985,849 | 1,660,596 |
| Yazoo & Mississippi Valley R. R. | 69,347 | 255,514 | 131,625 | 64,902 |

* Deficit.

‡ Report of receiver or receivers.

§ Report of trustee or trustees.

¶ Under trusteeship, Erie R. R. only.

† Includes Atchison, Topeka & Santa Fe Ry., Gulf, Colorado & Santa Fe Ry., and Panhandle & Santa Fe Ry.

‡ Includes Boston & Albany, lessor to New York Central R. R.

§ Includes Southern Pacific Company, Texas & New Orleans R. R., and leased lines. The report contains the following information: "Figures reported above for Southern Pacific Transportation System exclude offsetting debits and credits for rent for leased roads and equipment, and bond interest, between companies included therein. Operations for 1940 of separately operated Solely Controlled Affiliated Companies (excluding results for Southern Pacific Railroad Company of Mexico), not included in above statement, resulted in a net deficit of \$449,718 for the month and \$2,350,863 for the period. These results include \$212,107 for the month and \$1,056,795 for the period, representing interest on bonds of such companies owned by Southern Pacific Company not taken into income by S. P. Co. and, therefore, not included in the 1940 income results for the System reported above. The combined results for 1940 for Southern Pacific Transportation System and separately operated Solely Controlled Affiliated Companies (excluding S. P. R. Co. of Mexico) amounted to a net deficit of \$283,932 for the month and \$5,863,674 for the period. Figures herein given exclude results of S. P. R. Co. of Mexico for the reason that policy was adopted January 1, 1940 of making no further advances to that company, it being required to conduct its operations entirely within its own resources."

months was \$18,021,608 as compared with a red figure of \$88,758,749 for the first five months of 1939.

Sixty-two roads reported net incomes for May, while 67 reported net deficits; in May, 1939, there were 46 net incomes and 83 net deficits. For this year's first five months, 57 roads reported net incomes and 72 had deficits, as compared, respectively, with 49 net incomes and 80 net deficits during the first five months of 1939. The consolidated statement and that showing the net income of roads having annual operating revenues above \$25,000,000 are given in the accompanying tables.

Roosevelt Asks Funds for Bridge Alterations

President Roosevelt has transmitted to the House a supplemental estimate of appropriation, amounting to \$1,100,000, for the fiscal year ending June 30, 1941, to remain available until expended, for the War Department, for payment of the share

of the United States government of the cost of alteration of bridges over navigable streams, under the provisions of the recently-enacted bridge bill, which was passed over the President's veto. The law will force the government to share in the cost of alterations of railroad bridges which are ordered by the government but are not requested and will bring no benefit to the owners of the bridge.

Equipment Depreciation Orders

Equipment depreciation rates for the Florida East Coast and the Huntingdon & Broad Top Mountain have been prescribed by the Interstate Commerce Commission in a new series of sub-orders and modification of previous sub-orders in No. 15100, Depreciation Charges of Steam Railroad Companies. The composite percentages for all equipment, which are not prescribed rates, are 3.9 for the H. & B. T. M. and 3.48 for the F. E. C.

The latter is derived from prescribed

rates as follows: Steam locomotives, 3.39 per cent; other locomotives, 6.61 per cent; freight-train cars, 3.4 per cent; passenger-train cars, 3.19 per cent; work equipment, 5 per cent; miscellaneous equipment, 18 per cent.

House and Senate Approve Similar Measures

The Senate and House have passed S. 4070, which would exempt employees of railroad-owned and railroad-controlled coal mines from the Railroad Retirement Act and the Railroad Unemployment Insurance Act.

Now Public Service Commission of North Dakota

The name of the Board of Railroad Commissioners of the State of North Dakota has been changed to the Public Service Commission of the State of North Dakota, effective July 25, 1940, by an amendment to the state constitution.

Would Deny Exemption to C. & L. E.

Examiner Harold M. Brown has recommended in a proposed report that the Interstate Commerce Commission find that the Cincinnati & Lake Erie did not fall within the terms of the exemption proviso in section 1 (a) of the Railroad Retirement Act of 1937 and the Carriers Taxing Act of 1937, from April 29, 1935, to and including May 31, 1939. On the latter date the company confined itself, says the examiner, to strictly intrastate business.

Seeks Exemption from Stoker Order

The New York, Ontario & Western has asked the Interstate Commerce Commission to postpone the operation of its recent order requiring all locomotives in heavy freight service to install or be equipped with automatic stokers insofar as it affects 26 of its 184,000 lb., hand-fired, coal-burning locomotives. The petition of the road points out that the installation on these locomotives would cost \$78,000 and that such an installation would be "economically unsound and wasteful" in view of the fact that they have been in service for some 30 years.

Brooklyn Dodgers' Fans Follow the Boys to Boston Via New Haven

The fans of the Brooklyn Dodgers, celebrated universally as the noisiest and most loyal cheering section in the world, have been afforded opportunity to see their heroes play the Boston Bees at Boston, Mass., on August 11 by the New York, New Haven & Hartford. The road will operate a "Brooklyn Rooters' Special" which will leave Grand Central Terminal at 7:20 a. m. (e. s. t.) of the day of the game, due at South station, Boston, 11:55 a. m., and due back in New York at 11:30 p. m.

Safety Program Concentrates On the "Head End"

Literature for the September installment of the A. A. R.'s "All the Year-Every Year Safety Program" deals with safety as applied in the locomotive cab. The

large poster for public display points out that "A careful 'head-end' crew is a good start for a safe trip," while the accompanying circular contains a series of safe procedures as applied to the locomotive cab. The material, much of which was contributed by G. F. Baker, road foreman of engines, Atlantic Coast Line, covers such factors as proper bracing while handling stoker slides, the possibilities of accidents in connection with grate shaker arms, safe footing while oiling machinery, climbing out of cab windows and other routines peculiar to the head-end.

Central to Operate Labor Day Trip for Railroad Hobbyists

The New York Central will operate a three-day "railroad hobby fiesta" to Buffalo, N. Y., out of New York and Boston, Mass., starting August 31. Members of the party will travel on the Empire State Express from New York and on a regular train over the Boston & Albany from Boston. At Buffalo they will be offered opportunity to witness operations at Buffalo Central terminal from the signal tower at hours when the majority of through trains pass through the city; a special inspection trip of the Central's Buffalo yards and terminal; a Niagara Falls side trip and a special run over the Arcade & Attica short line railroad. The return trip from Buffalo will be made over the Ontario division, which is now exclusively a freight line, via Oswego and Fulton. The round trip has been priced at \$10; the side trips are extra.

July Employment 4.77 Per Cent Above Last Year

Railroad employment increased another 1.47 per cent—from 1,035,079 to 1,050,254—during the one-month period from mid-June to mid-July, while the July total was 4.77 per cent above that for July, 1939, according to the Interstate Commerce Commission's compilation based on preliminary reports. The index number, based on the 1923-1925 average and corrected for seasonal variation, stood at 57.3 in July as compared with June's 56.7 and July, 1939's 54.7.

July employment in all groups was above that of June, with the largest increase being shown in the maintenance of way and structures group—up 2.6 per cent. Meanwhile, employment in all groups was above that of July, 1939, the largest increases being the 9.03 per cent rise in the maintenance of equipment and stores group, and the 5.17 per cent rise in the transportation (train and engine service) group.

Pullman to Build More Coach-Sleepers

The Pullman Company, encouraged by the success of two experimental coach-sleepers which have been in service on the North Coast Limited of the Chicago, Burlington & Quincy-Northern Pacific and the Empire Builder of the Chicago, Burlington & Quincy-Great Northern between Chicago and Seattle, Wash., during July, is converting two more sleeping cars into cars of this type. In this type of car, described in the *Railway Age* of June 29, page 1193, berths in the compartments are

arranged in tiers of three. The charge between Chicago and Seattle is \$5 for the accommodation with a rail ticket of \$39.50.

During the first 13 runs of the cars in July, 496 passengers were carried. A questionnaire disclosed that in the absence of the coach sleepers, 33.5 per cent of the passengers would have used tourist cars; 10.1 per cent standard Pullmans; 38.3 per cent, railroad coach; 9.5 per cent, bus; 6.8 per cent, automobile; 0.6 per cent, airplane, and 1.2 per cent would not have made the trip.

Reasons for travel were: Vacation, 74.9 per cent; commercial, 16.4 per cent; migratory, 5.6 per cent, and emergency, 3.1 per cent. The roads found that 96.3 per cent of the passengers found the service favorable and 3.7 per cent unfavorable.

On August 10, these two cars were transferred to Chicago-San Francisco service for operation during the balance of the summer. One car was placed on the Pacific Limited of the Southern Pacific-Union Pacific-Chicago & North Western leaving San Francisco, while the other was placed on the Exposition Flyer of the Chicago, Burlington & Quincy-Denver & Rio Grande Western-Western Pacific out of Chicago.

"The Smiths Go To Town"—On the New Haven

The New York, New Haven & Hartford believes that suburbanites living along its line in Westchester county find its all-day half-hourly service to New York an important thing in their lives, hence it has prepared a witty, brisk, 15-page booklet in two tones describing how the New Haven affects the lives of a family named Smith that lived "on the Sound side of Westchester."

Mr. Smith, "a man of definite stamp," often worked late at the office and found the half-hourly service just what he wanted. Mrs. Smith liked to go shopping



Illustrations Like This Appear on Every Page of the New Haven's New Booklet on Suburban Service. This One is Captioned "They Rode Together . . . and Talked Together . . . and Came Home When They Wanted To."

without "browbeating the donors of parking lot scratches on her new car"; hence, she went New Haven. The Smith twins liked to taste night life in Manhattan, but nobody worried when they came home late on the New Haven "Night Cap" which leaves Grand Central in the wee hours of Sunday morning. And Aunt Melinda Smith, who was economy-minded, often came to town with the club "girls" for lectures and such to take advantage of the special low group-fare trains. The booklet takes care to point out that "any similarity to persons now living in Westchester is purely coincidental."

"Southern Belle" To Be Inaugurated on September 1

September 1 has been set as the tentative date for the inauguration of the "Southern Belle," a new Diesel-electric streamlined passenger train, by the Kansas City Southern-Louisiana & Arkansas between Kansas City, Mo., and New Orleans, La. The schedule for the three trains, which will operate via Coshulta and Alexandria, will be about 21 hours.

A contest is now being conducted to select a typical Southern belle to symbolize these trains and on August 23 one of the trains which will be operated as a special from Kansas City to New Orleans, will carry the regional winners of the contest, representatives of the railroads, the builders of the equipment and the press. Finals of the contest will be held at Lake Ponchartrain on August 24. The train will be opened to the public at New Orleans on August 25 and will begin a seven-day exhibition tour over this railroad on the following day.

Pennsylvania Affiliate Gets I. C. C. Authority

Division 5 of the Interstate Commerce Commission has found that the Pennsylvania Truck Lines, Inc., a motor carrier affiliate of the Pennsylvania, is entitled to continue operation as a common carrier by motor vehicle in interstate and foreign commerce of general commodities, between points in Ohio, Indiana, Pennsylvania, Michigan and West Virginia, over specified routes, serving points thereon which are stations of the Pennsylvania, because of "grandfather rights."

At the same time Division 4 denied the company the right to operate in an area embracing Detroit, Mich., and points within eight miles of the city's corporate limits. Authority was also granted to haul general commodities over specified routes, serving certain points in Ohio which are stations of the Pennsylvania. These authorizations are subject to the four conditions which the commission now requires in all applications of railroad affiliates, the most important of which is that shipments shall be limited to those which the carrier receives from or delivers to the railroad under a through bill of lading, in addition to movement by the motor carrier, a prior or subsequent movement by rail.

June Locomotive Shipments

June shipments of railroad locomotives totaled 39 as compared with 43 in May and 32 in June, 1939, according to reports

received by the Department of Commerce's Bureau of the Census from builders other than railroad shops. Total shipments for this year's first six months involved 243 locomotives as compared with 139 in the first half of last year.

Unfilled orders at the close of June totaled 146 locomotives, including 81 steam, 38 Diesel-electrics and five of other types for domestic service and 22 steam for export. At the close of May there were unfilled orders for 152 locomotives, while the total was 151 as of June 30, 1939. The aforementioned total of 39 locomotives shipped in June included five steam and 30 Diesel-electrics for domestic service and four steam for export.

Data supplied by the Car Service Division, Association of American Railroads, on locomotive building in railroad shops show that eight locomotives, including five steam and three electrics, were thus produced in June, as compared with three (all steam) built in June, 1939. During this year's first six months there were 42 locomotives (25 steam and 17 electrics) built in railroad shops; the comparable total for the first half of 1939 was 27, including 10 steam and 17 electrics. As of July 1, there were on order in railroad shops 16 locomotives, including 13 steam and three electrics.

I. C. C. Probe of Motor Carrier "Proportional" Rates

Various proceedings involving suspended schedules wherein motor carriers are proposing to publish proportional rates and contract charges on forwarder shipments have been consolidated by the Interstate Commerce Commission into a general investigation for hearing upon one record. The proceeding is docketed as No. 28496, and the hearing is set for September 9 at the Morrison Hotel, Chicago, before Commissioner Patterson and Examiner Mattingly.

The order instituting the investigation sets forth that it will comprise an inquiry "into the lawfulness of so-called proportional rates of such common carriers and the minimum charges of such contract carriers applicable on interstate or foreign traffic transported from named points and which has arrived at such points as a part of shipments by rail, water or motor vehicle for movement beyond over the lines of respondents in less-than-carload, less-than-truckload or truckload quantities; or on less-than-carload, less-than-truckload, or truckload shipments of freight which move to named points over respondents' lines, for movement beyond, as parts of shipments by rail, water, or motor vehicle."

A notice issued in connection with the proceeding by I. C. C. Secretary W. P. Bartel stated that "it is the intention of the commission to confine consideration in these proceedings, for the time being, to the issues of unjust discrimination and unreasonable prejudice and preference in connection with the rates of common carriers." Evidence received at the Chicago hearing will relate to rates applicable in the territory contiguous to that city; while developments there "will be of assistance in mapping out subsequent procedure." Meanwhile, the commission "would be glad

... to receive suggestions from any interested party as to times and places of additional hearings, and other procedural matters looking to the orderly conduct of the proceedings."

Freight Car Loading

Loading of revenue freight for the week ended August 3 totaled 718,430 cars, the Association of American Railroads announced on August 8. This was a decrease of 59 cars below last week, but an increase of 61,877 cars, or 9.4 per cent, above the comparable 1939 week and an increase of 134,368 cars, or 23 per cent, above the same week in 1938.

As reported in last week's issue, loading of revenue freight for the week ended July 27 totaled 718,489 cars, and the summary for that week, as compiled by the Car Service Division, A. A. R., follows:

| Revenue Freight Car Loading | | | |
|----------------------------------|---------|---------|---------|
| For Week Ended Saturday, July 27 | | | |
| Districts | 1940 | 1939 | 1938 |
| Eastern | 146,405 | 133,010 | 125,228 |
| Allegheny | 153,777 | 129,310 | 106,841 |
| Pocahontas | 50,214 | 48,290 | 40,415 |
| Southern | 97,763 | 93,626 | 84,979 |
| Northwestern | 120,190 | 105,198 | 84,683 |
| Central Western | 105,359 | 100,960 | 100,611 |
| Southwestern .. | 44,781 | 45,137 | 45,940 |
| Total Western Districts | 270,330 | 251,295 | 231,234 |
| Total All Roads | 718,489 | 655,531 | 588,697 |
| Commodities | | | |
| Grain and grain products | 46,467 | 40,822 | 50,706 |
| Live stock | 9,482 | 11,591 | 10,829 |
| Coal | 122,138 | 113,271 | 99,606 |
| Coke | 10,671 | 6,516 | 4,546 |
| Forest products | 36,071 | 32,451 | 27,870 |
| Ore | 68,562 | 43,564 | 23,123 |
| Merchandise I.C.I. | 148,076 | 152,429 | 147,928 |
| Miscellaneous .. | 277,022 | 254,887 | 224,089 |
| July 27 | 718,489 | 655,531 | 588,697 |
| July 20 | 729,897 | 651,665 | 580,818 |
| July 13 | 740,465 | 669,888 | 602,445 |
| July 6 | 636,901 | 551,152 | 500,981 |
| June 29 | 752,326 | 661,404 | 588,880 |

Cumulative Total,
30 Weeks ... 19,732,147 17,796,036 16,503,573

In Canada.—Carloadings for the week ended July 27 were 54,655, as compared with 57,125 in the previous week and 45,588 a year ago, according to the summary of the Dominion Bureau of Statistics.

| | Total Cars Loaded | Total Cars Rec'd from Connections |
|-------------------------------|-------------------|-----------------------------------|
| Total for Canada: | | |
| July 27, 1940 | 54,655 | 22,963 |
| July 20, 1940 | 57,125 | 24,087 |
| July 13, 1940 | 57,238 | 22,699 |
| July 29, 1939 | 45,588 | 18,269 |
| Cumulative Totals for Canada: | | |
| July 27, 1940 | 1,520,858 | 735,344 |
| July 29, 1939 | 1,299,791 | 613,346 |
| July 30, 1938 | 1,314,619 | 612,763 |

Fourth Section Relief on Blackstrap Molasses Rates

Fourth section relief has been granted by the Interstate Commerce Commission, Division 2, to permit railroads to meet water competition for blackstrap molasses moving from Gulf of Mexico ports to East St. Louis, Ill., and St. Louis, Mo., and to prevent the rate published in connection with the foregoing and the trainload rate on blackstrap from New Orleans, La., to Peoria, Ill., from resulting in a reduction in normal rates over wide territories of origin and distribution. The former situation involved relief from the long-and-

short-haul clause, while the latter required relief from the aggregate-of-intermediates provision—the proceedings, both embraced in the one decision, being docketed respectively as Fourth Section Application No. 18112 and Fourth Section Application No. 18120.

To meet the water competition the railroads proposed a rate of 15 cents per 100 lb. as compared with the normal rate of 25 cents from New Orleans, La., Good Hope, Reserve, Gramercy, and Mobile, Ala., to East St. Louis and St. Louis. The commission thought the proposal went further than necessary and authorized a 16-cent rate with the condition that it shall not apply over routes where the car-mile earnings would be less than 10 cents, after the deduction of the switching charges absorbed at origin and destination by carriers forming such routes, and the tank-car rentals for the loaded and empty movement. Rejecting the carriers' proposal the commission had said that "considering the advantages of rail transportation, we are not satisfied that a rate as low as 15 cents or \$3 per ton is necessary . . . The rate proposed is only 0.58 cents per 100 lb., or 11.6 cents per net ton, more than the cost shown for traffic actually moving by water."

In the brief discussion leading up to its favorable action on the aggregate-of-intermediates application, the commission cited examples to show how without the relief sought the rate authorized in connection with the long-and-short-haul-clause application and the existing trainload rate could be used in combinations to cut normal rates between points where no possibilities of water transportation exist.

War to Cut Canada's Wheat Traffic

Another attack by Canada's Conservatives, led by R. B. Hanson, on the continuance of work on the new C. N. R. Montreal terminal and disclosure by former Transport Minister C. D. Howe, who is now Munitions and Supply Minister, that the closing of European wheat markets would cut in half the grain revenues of the road this year featured the annual debate in the House of Commons at Ottawa on the budget of the Canadian National. The regular measure to authorize parliament to finance any deficit of the road was approved after only two hours' talk. This year the government is asking parliament to vote \$15,000,000 for the estimated deficit.

On the road's performance thus far in 1940 Mr. Howe said:

"We had a budget for 1939 giving an estimated expenditure of \$43,000,000 and in July, 1939, we were about \$2,000,000 behind our budget. In the last six months we produced the second largest wheat crop that Canada has ever had, with free movement of wheat, and, with the impetus of the war coming in September, resulting in an immediate lift in traffic; and instead of an estimated loss of \$43,000,000 we turned in a deficit of \$40,000,000. What is the position today? The budget of the Canadian National, made up month by month, shows an improvement of \$20,000,000, all in the months from January to August.

"We must remember that our gross earnings from wheat alone last year were \$24,-

000,000. Today we have an embargo on the movement of wheat to Fort William. We have all storage space filled with wheat from Fort William to the Atlantic ocean, and we have some 15,000 cars loaded with wheat, which cannot be unloaded because there is no terminal space—and that at the end of a crop year with autumn movement two weeks away.

"We have earned up to date this year \$8,000,000 gross from the movement of wheat, and the best that the railways can hope for, the best estimate they can give, is another \$4,000,000 from the movement of wheat. So that we have this year probable gross earnings from wheat of \$12,000,000 as against earnings last year of \$24,000,000."

Mexican Employees Object to Economies

The resignation of General Manager Juan Gutierrez and the Board of the Workers Administration of the National Railways of Mexico has been forced by the Union of Mexican Railway Workers following a controversy over the Board's proposed changes in working conditions which would bring about a saving of 1,800,000 pesos a month in accordance with President Cardenas' request that the railways be reorganized and that the Workers Administration comply with its obligations to the federal government by paying 5.64 per cent of the gross earnings as required by law. The Board's proposal was as follows:

1. That beginning August 1, 1940, salaries be reduced to what they were on May 1, 1938, when the Workers Administration was created.
2. Suppression of unnecessary posts.
3. Restriction of overtime payments.
4. That payment of salaries of non-professional illness be established on the basis of 50 per cent during 60 days, instead of full payment during 15 days.
5. That personnel be compelled to dispose of vacations in time instead of receiving its equivalent in cash.
6. That temporary vacancies during 15 days, except where absolutely necessary, must not be made.
7. That a maximum of motive power be utilized by completing train loads; modifying present services and creating others.
8. Re-establish a most rigid disciplinary regime, and that authority be reinstated to heads of departments to apply discipline.
9. Suppression of train services, tricks or personnel of any department considered unnecessary.

Pullman Denies Monopoly Charge

The Pullman group of companies has not violated and is not now violating any law of the United States, according to D. A. Crawford, president of Pullman, Inc., in a second quarter statement sent stockholders on August 6. The Department of Justice on July 12, as reported in the *Railway Age* of July 20, page 119, filed a complaint in the federal district court at Philadelphia, Pa., charging that the Pullman organization has prevented the railroads from using modern, lightweight, streamlined cars manufactured by competing companies in order to maintain in service its own obsolete equipment and that the dominant position of the Pullman organization has given it power to force on the railroads restrictive contracts which compel them to

use Pullman-built-and-operated sleeping car equipment exclusively.

"This action," the report to stockholders said, "attacks a business which during its long history since incorporation in 1867 has developed naturally into the present large-scale operation, as the result of economic forces and in response to the demand of the railroads and the public for sleeping car service on a unified nationwide basis that could best be rendered by the Pullman system of pooled operation. The provision in connection with this extensive travel service, of facilities for the manufacture of standardized and well-adapted equipment under the advantageous condition of concentrated production, is a further natural development that began early in the history of the business and parallels similar provision by many railroads and other public utilities.

"The bill of complaint filed in this case is incorrect in many statements alleged to be fact, and is wholly mistaken in its allegations with respect to the spirit and manner in which the Pullman manufacturing and car operating businesses have been conducted for so many years. There has been no change of principle or practice in the conduct of either of these businesses following the introduction in recent years of new types of passenger equipment and new methods of passenger transportation, and there is no warrant for this present belated action except as it may be found in an apparent general assault upon large-scale business under the federal anti-trust laws.

"While experience has indicated the advisability of presenting in court, rather than in a publicity contest with a government agency, the defense against legal attacks of this kind, it is nevertheless desirable that stockholder-owners of the assailed companies be informed that the basic allegation of restraint of trade made by the Department of Justice in this case, depending upon the assertion that Pullman has used its contract relations with the railroads to discourage or prevent the introduction of modern types of lightweight passenger equipment, is clearly disproved by the record facts that the Pullman Company—

(a) has furnished to the railroads several hundred lightweight sleeping cars of the most modern type,

(b) has employed more than \$25,000,000 of its resources in financing the investment required to place this new equipment in service,

(c) has sought vigorously to extend such improved service on the railroads, and

(d) today has additional supplies of such equipment in the course of manufacture or on hand awaiting assignment to the railroads.

"Concurrently the Pullman-Standard Car Manufacturing Company pioneered in the development of lightweight passenger car structures, built the first practicable separate cars and unit trains of that type, and thereafter has continued the development and encouraged the purchase and use of such equipment by the railroads, with the result that it has built more of the modern widely-accepted types of such passenger equipment than any other carbuilding concern. This whole charge, that the

Pullman group of companies has obstructed or grudgingly permitted the development and use of modern lightweight passenger equipment, falls to pieces when subjected to the impact of fact.

"It is the considered opinion of the management and counsel of the Pullman group of companies, that these companies have not violated and are not now violating any anti-trust or other law of the United States; and further, that this suit will be successfully defended and should not therefore occasion anxiety to stockholders."

Brotherhoods Assail Draft Bill

The five operating brotherhoods have advised the Senate and the House of Representatives that they are opposed to the Burke-Wadsworth military training bill. Their position was made known in a letter to Chairman Sheppard of the Senate Military Affairs committee and Chairman May, of the House Military Affairs committee which was signed by A. Johnston, grand chief engineer of the Brotherhood of Locomotive Engineers; D. B. Robertson, president of the Brotherhood of Locomotive Firemen and Enginemen; J. A. Phillips, president of the Order of Railway Conductors of America; A. F. Whitney, president of the Brotherhood of Railroad Trainmen; and T. C. Cashen, president of the Switchmen's Union of North America. The letter was introduced into the Congressional Record by Senator Wheeler during debate on August 6 on the bill to give the President power to mobilize the National Guard for a year's training.

The railmen feel that adequate support should be given to measures for national defense, but are not convinced that conscription is needed at this time. Rather, they feel that voluntary enlistment will meet any needs that present themselves. "Patriotism", says the letter, "is not the monopoly of those who are feverishly urging this conscription bill. We may rightly assume that all citizens are patriotic and if given the opportunity and impressed with the necessity for their doing so, they will volunteer their services in defense of our country."

"Compulsory military service in time of peace", continues the letter, "is the very antithesis of freedom. It involves an infringement of the very principles of democracy which it is invoked to defend. It imposes upon the individual a mandate to give service which he may not be in position to render without serious sacrifices on the part of himself or his family, or both, and this at a time when there are thousands of other individuals who would be glad to avail themselves of the opportunity to serve if such opportunity were not denied by the restrictive rules observed by the recruiting service."

"These organizations", the letter concludes, "are wholeheartedly in accord with the establishment and maintenance of an adequate national defense, and their membership will not be found wanting in any support of such proper measures, but we are convinced that under present conditions the regimenting of our people according to the contemplated military pattern is unnecessary and is an infringement upon the civil liberties which they may reasonably expect to enjoy."

Supply Trade

Clinton E. Stryker, of McKinsey, Kearney & Co., Chicago, has resigned to become vice-president and assistant to the president of the **Nordberg Manufacturing Company**. He graduated from Armour Institute of Technology in 1917 and from that year until 1919 was employed as a



Clinton E. Stryker

testing engineer by the Commonwealth Edison Company, Chicago. From 1920 to 1923, he was assistant professor of electrical engineering at Armour Institute of Technology and at the same time served as chief engineer for the Ozone Pure Arier Company and as electrical engineer for the Underwriters Laboratories. In 1923, he entered the employ of the Fansteel Products Company, now the Fansteel Metallurgical Corporation, North Chicago, Ill., as an electrical engineer and subsequently until 1935 was manager of the railway and industrial division, vice-president and general manager of the Ramet Corporation of America, a subsidiary, and chief engineer. While with Fansteel he was in charge of the development and promotion of the use of Balkite rectifiers and battery chargers for railway signal and telegraph service. In 1935, he became a partner of McKinsey, Kearney & Company.

William H. Heckman, formerly sales representative of the T-Z Railway Equipment Company, Chicago, has been appointed sales engineer of the **Sargent Company**, Chicago.

R. G. Justus, representative for the **Westinghouse Air Brake Co.** in the Southwestern district, with headquarters at St. Louis, Mo., has been appointed manager of industrial sales, with headquarters at Wilmerding, Pa. Mr. Justus entered the employ of the company in 1911 as clerk in the St. Louis, Mo., office and was later promoted to industrial representative. Since 1932, he has been representative in the Southwestern district, dealing both with industries and the railroads.

G. Cook Kimball, executive vice-president, **United States Steel Corporation of Delaware**, with headquarters at Chicago, will temporarily make his headquarters at Washington, D. C., effective August

15, in the interest of further co-ordinating United States Steel activities arising from increasing requirements of the national defense program. During his temporary absence from Chicago, **C. H. Rhodes**, vice-president, will take over the activities and duties which have been under Mr. Kimball's direction.

Samuel M. Felton has been appointed Eastern sales manager of the railroad division of the **Edward G. Budd Manufacturing Company**, with headquarters at Philadelphia, Pa.

OBITUARY

D. M. Smith, assistant district sales manager, Chicago office of the Allegheny Ludlum Steel Corporation, died recently at his home in Chicago. Prior to merger with Ludlum, Mr. Smith was district sales manager for the Allegheny Steel Company.

John E. Ward, who was for many years connected with the car heating equipment business before his retirement in 1918, died at his home in Hackensack, N. J., on August 5, at the age of 65. He was born at Poughkeepsie, N. Y., on June 3, 1875, and rose through the ranks of the Gold Car Heating & Lighting Co. to become a vice-president. He resigned from the latter position in May, 1907, to form the Ward Equipment Company, manufacturers of heating and ventilating equipment, of which he became president. He later went with the Standard Heat & Ventilation Co., upon its absorption of the Ward Equipment Company, and in 1917 became an officer of the Vapor Car Heating & Lighting Co., which was an amalgamation of the Chicago Car Heating Company and Standard.

O. W. Buening, vice-president in charge of manufacture, Westinghouse Air Brake Company and the Union Switch & Signal Co., died on July 27, at Lewes, Del., after a brief illness. He had been vaca-



O. W. Buening

tioning at Rehoboth Beach. Mr. Buening learned the machinist's trade on the Chicago, Burlington & Quincy at Wymore, Neb., and thereafter worked for several years in the shops of several western roads. In 1901 he was graduated from Purdue

University with a degree in mechanical engineering; the subject of his thesis was the air brake. Immediately after graduation he entered the employ of the Westinghouse Air Brake Company as a special apprentice, and six years later became general superintendent of the Wilmerding (Pa.) plant in 1907. In 1917 he was promoted to works manager and in 1926 was appointed general manager of works for the air brake company and its subsidiaries. In 1930 Mr. Buening was elected vice-president in charge of manufacture and in the same year was elected to a corresponding position with the Union Switch & Signal Co., which position he held until his death.

Equipment and Supplies

Order Two More Streamliners

Two more streamliners for operation between Chicago and San Francisco, Cal., and Los Angeles on a 39¼ hr. schedule were ordered this week, at a cost of more than \$4,000,000. One, the City of San Francisco will be jointly owned and operated by the Chicago & North Western, the Union Pacific and the Southern Pacific and the second by the North Western and the Union Pacific. The 17 cars of each will be built by the Pullman Standard Car Manufacturing Company and the Diesel-electric power plants by the Electro-Motive Corporation, subsidiary of General Motors. Each of the Diesel locomotives will have 6,000 hp. consisting of three 2,000 hp. units.

When the new trains are placed in service, Los Angeles and San Francisco will each have two 17-car streamliners on scheduled departures every three days to and from Chicago. Except for minor differences in available Pullman accommodations, the four trains will be identical.

All cars of the new trains will be of aluminum alloy construction and of the same general contours as the modern streamliners developed by the three railroads for their transcontinental service, with modifications to make for more effective streamlining. The color design of the trains provides for a harbor mist gray roof, with the sides an armour yellow, trimmed with scarlet-red striping and lettering.

The interior of the cars and the facilities will represent the latest developments in decoration and furnishings for passenger comfort. Fluorescent lighting will be used in the club and lounge cars, the diners and chair cars. All cars will be self-contained as to air-conditioning and lighting. The trains will be equipped with intercommunicating telephone systems and will have electric heat in addition to the regular steam heat.

LOCOMOTIVES

THE SOUTHERN PACIFIC has ordered 20 4-8-4 type locomotives from the Lima Locomotive Works. Inquiry for this equip-

ment was reported in the *Railway Age* of July 6.

THE DULUTH, MISSABE & IRON RANGE has received bids for eight locomotives.

THE ATLANTIC COAST LINE has placed an order for 18 Diesel-electric 2000-hp. locomotive units for passenger service with the Electro-Motive Corporation.

FREIGHT CARS

THE CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC is completing the construction of 2,000 50-ton box cars and 25 caboose cars in its own shops.

THE CHICAGO, BURLINGTON & QUINCY will shortly begin the construction of 1,000 single sheathed 50-ton box cars in its own shops.

THE CHICAGO, ROCK ISLAND & PACIFIC plans to ask the district court for permission to purchase 800 50-ton box cars and 200 50-ft. automobile cars and to build 200 gondola cars in its own shops.

PASSENGER CARS

THE ATLANTIC COAST LINE has ordered 17 light-weight, stainless-steel passenger coaches from the Edward G. Budd Manufacturing Company.

IRON AND STEEL

THE CHICAGO GREAT WESTERN.—The District Court on August 8 approved the 1941 improvement budget program of this road calling for the expenditure of \$1,100,000 for 3,500 tons of rails, 2,500 tons of fastenings and 260,000 cross-ties.

THE WABASH has been authorized by the District Court to spend \$560,000 for the purchase and laying of new rails and the relaying of used rails on secondary line. It was also authorized to spend \$21,881 for interlocking four main line switches in its North Kansas City yards.

A SERIES OF COMMEMORATIVE COVERS marking successive dates in the progress of the building of the Union Pacific is the latest item for stamp collectors. The Poor Richard Press of Chicago is currently issuing a series of covers to be mailed at various dates between now and the spring of 1944 from different cities and towns along the original route of the Union Pacific from Omaha, Neb., to Promontory, Utah, which will treat important historical events in the history of the road. Cachets in the series are in two colors and the enclosure takes the form of a folder explaining in detail the significance of the cover itself. The first cachet, mailed from Omaha on July 10, marked the 75th anniversary of the laying of the first rail. The second, mailed also from Omaha, on August 3, commemorated the 75th anniversary of the first run of the locomotive "General McPherson." Other events will be marked in order.

Financial

ALABAMA CENTRAL.—*Abandonment.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to abandon a line extending from Manchester, Ala., to Sunlight, six miles.

ATCHISON, TOPEKA & SANTA FE.—*Abandonment by the Cane Belt.*—The Cane Belt and the Gulf, Colorado & Santa Fe, respectively, have been authorized by Division 4 of the Interstate Commerce Commission to abandon a line and the operation of a line extending from El-bridge, Tex., to Bonus, 5.5 miles.

ATLANTIC COAST LINE-RICHMOND, FREDERICKSBURG & POTOMAC.—*Bonds of the Richmond Terminal.*—The Richmond Terminal has asked the Interstate Commerce Commission for authority to execute, issue and sell \$3,150,000 of 3½ per cent first mortgage bonds, the proceeds to be used to refund \$3,233,000 of first mortgage 30-year five per cent guaranteed gold bonds, due January 1, 1952. The new bonds will be dated September 1, 1940, and will mature September 1, 1965.

In an accompanying application the Atlantic Coast Line and the Richmond, Fredericksburg & Potomac have asked authority to guarantee the principal and interest of the bonds.

BALTIMORE & OHIO.—*Operation.*—This company has asked the Interstate Commerce Commission for authority to operate, under trackage rights, over the Municipal Bridge between St. Louis, Mo., and East St. Louis, Ill., 2.3 miles.

CHESAPEAKE & OHIO.—*Equipment Trust Certificates.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to assume liability for \$2,500,000 of 1¾ per cent equipment trust certificates, maturing in 10 equal annual installments of \$250,000 on August 1 in each of the years from 1941 to 1950, inclusive. The issue has been sold at 101.777 to Blyth & Co., Inc., making the average annual cost of the proceeds to the company 1.41 per cent.

CHICAGO, BURLINGTON & QUINCY.—*Lease of the Fort Worth & Denver City and the Wichita Valley by the Colorado & Southern.*—The Colorado & Southern has been authorized by Division 4 of the Interstate Commerce Commission to lease for 25 years the properties owned and operated by the Fort Worth & Denver City and the Wichita Valley. At the same time Division 4 granted the C. & S. authority to assume liability, as lessee, for the payment of the principal and interest on a note of the Fort Worth & Denver City for \$8,176,000 now held by the Reconstruction Finance Corporation.

At the oral argument considerable opposition was voiced by various civic and commercial interests in Fort Worth, Tex., and Childress against the proposal to move the shops and accounting offices to Denver. On this subject, Division 4 said that "It is unfortunate that the savings to be

accomplished will adversely affect employees and the cities of Fort Worth and Childress, and that the proposed operation by the Colorado & Southern may antagonize the people of Texas. We hope that that antagonism will not be as serious as suggested on oral argument."

Division 4 also felt that the employees to be either displaced or removed to Denver are reasonably protected under the terms of the so-called Washington Agreement. These terms, it feels, are "more liberal" than those which it recently prescribed in the case of the lease of the Chicago, Rock Island & Gulf by the Chicago, Rock Island & Pacific.

CHICAGO GREAT WESTERN.—*Reorganization.*—Division 4 of the Interstate Commerce Commission has approved \$300,000 as the maximum amount of money that may be expended by the reorganization managers of this company to effect the mechanical and legal details of the reorganization under section 77 of the Bankruptcy Act.

LEHIGH VALLEY.—*Interest Modification Plan.*—The plan of this road to adjust interest and maturity payments on securities totalling \$105,836,000 under the provisions of the Chandler Act was approved by a three-judge federal court at Philadelphia, Pa., on August 7, the dead-line set for confirmation of the plan in accordance with the one-year time limit of the Act. The plan, in brief, (which was fully described in the *Railway Age* of March 25, 1939, page 542) provides for the extension, without interest, of 75 per cent of each of five semi-annual interest installments of \$1,558,463 each on \$72,336,000 of general consolidated mortgage bonds and for extension for a period of ten years of maturity dates of (1) Pennsylvania & New York Canal & Railroad Co., \$8,500,000, matures April 1, 1949; (2) The Lehigh Valley Railway Co. 4½ per cent, \$15,000,000, matures July 1, 1940; and, (3) Lehigh Valley Terminal Railway Co., 5 per cent, \$10,000,000, matures October 1, 1941. All bank and R. F. C. loans are to be extended for five years from November 1, 1938.

The Lehigh Valley plan was proposed in August, 1938; approved by Division IV of the I. C. C. in February, 1939; declared operative on March 15, 1939; filed with court under the newly-enacted Chandler Act on August 7, 1939 and hearings opened on September 29, 1939. From time to time the court adjourned hearing because of the uncertainty of the outcome of the railroad's tax controversy with the State of New Jersey and made it clear that it would withhold confirmation unless settlement was assured.

MOBILE & OHIO.—*Public Auction.*—The property of the Mobile & Ohio, which is now in receivership, was sold at public auction on August 1 at Mobile, Ala., for \$13,411,015 with all but \$15 worth of it going to the road's bondholders reorganization committee. In turn, the committee will convey the property to the Gulf, Mobile & Northern and the roads will be merged into a 2,007-mile major trunk line. The sale was conducted by Jack Meredith, special master under appointment of

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the federal court, and virtually all bidding was by E. D. Scruggs, New York, representing the bondholders' committee. Mr. Scruggs bought in all properties except certain contracts existing between the Mobile & Ohio and the Gulf Terminal Company, operators of the Mobile Union Station, and properties of the Mobile & Bay Shore Railroad, a freight line between Mobile and the Alabama coast at Bayoulabatre. Nicholas Stallworth, attorney for the First National Bank of Mobile, trustee under the Bay Shore mortgages, bought the interests in the Bay Shore in three sections at \$5 each.

NEW YORK, NEW HAVEN & HARTFORD.—Abandonment.—This company has asked authority from the Interstate Commerce Commission to abandon a line extending from Adamsdale Junction, Mass., to Franklin Junction, 11.2 miles.

NEW YORK, NEW HAVEN & HARTFORD.—Equipment Trust Certificates.—Division 4 of the Interstate Commerce Commission has modified its order of May 18, 1934, so as to permit \$1,485,000 of this company's equipment trust certificates of 1934 to be amended by eliminating therefrom the right of redemption, by providing for the issue of definitive certificates in bearer form in the denomination of \$1,000, instead of in registered form in multiples of \$1,000, and by reducing the interest rate from four per cent to 2½ per cent. At the same time authority was granted to the company to assume liability for the abovementioned certificates. They are now held by the Reconstruction Finance Corporation, which has assented to the reduction in the interest rate.

RIO GRANDE SOUTHERN.—R. F. C. Loan.—Division 4 of the Interstate Commerce Commission has again declined to approve an application of this company for a \$40,000 loan from the Reconstruction Finance Corporation. As in the previous report, noted in the *Railway Age* of January 6, page 114, Division 4 found that the security offered for the loan, a \$40,000 receiver's certificate, would not be adequate. Commissioner Porter dissented but expressed no opinion.

ST. LOUIS SOUTHWESTERN.—Reorganization.—Division 4 of the Interstate Commerce Commission has shifted from October 10 to October 3 the date for the oral argument of this company's reorganization case in Washington, D. C.

ST. LOUIS SOUTHWESTERN.—Operation and Abandonment.—This company has been authorized by Division 4 of the Interstate Commerce Commission to (1) operate, under trackage rights, over tracks and facilities of the Kansas City, Shreveport & Gulf Terminal, 6,972 ft., and (2) abandon operation, under trackage rights, over tracks and facilities of the Louisiana & Arkansas, 4,065 ft., all in Shreveport, La.

TEXAS MEXICAN.—Operation.—This company has asked authority from the Interstate Commerce Commission to extend its operations from milepost 156 to Flour Bluff, Tex., 19 miles.

Construction

CHESAPEAKE & OHIO.—The time within which this company may complete the construction of an extension in Logan and Wyoming Counties, W. Va. has been extended from August 1, 1940, to August 1, 1942 by Division 4 of the Interstate Commerce Commission.

DELAWARE, LACKAWANNA & WESTERN.—The New York Public Service Commission has authorized this road to award two contracts in connection with the elimination of grade crossings at Syracuse. The first contract, for a temporary passenger station and changes in two freight houses, in the amount of \$19,105, will be awarded to Kraft & Detor of Syracuse. The other contract, for the construction of a heating plant for the station and coach yard, will be awarded to the Onendaga Heating & Ventilating Co., of Syracuse, at a cost of \$6,553.

ERIE.—A contract has been awarded the Hogan-Gaul Construction Company, Red Bank, N. J., for the elimination of the Mill Street grade crossing by the extension of Franklin avenue at Belwood Park, N. J. This work provides for a two-track bridge consisting of center pier and gravity concrete abutments with return wings. The spans will be concrete decks, consisting of 170 lb. 36¾ in. by 12-in. by 1¼-in. wide flanged I-beams encased in concrete, with concrete parapet walls and reinforced concrete railing. The bridge is designed for Cooper E-70 loading and has been architecturally treated to harmonize with other structures in the near vicinity.

GULF, MOBILE & OHIO.—Negotiations for a loan to cover the cost of construction of a new eight-story general office building in Mobile, Ala., for the Gulf, Mobile & Ohio are nearing completion and bids for construction will be asked at an early date. The new building will be located on the northwest corner of St. Francis and Royal streets and will have ground floor dimensions of 76 ft. by 136 ft. Financing of the new structure is by a long term loan (18 years), payment of which will be in lieu of rent which is now being paid for general office accommodations in Mobile and elsewhere.

ST. LOUIS UNION STATION.—A contract has been awarded the Fruin-Colnon Contracting Company, for the construction of a fireproof, steel, concrete and brick interlocking tower to replace the one destroyed by fire on July 22.

UNION PACIFIC.—Approximately \$112,000 is being spent for the reconstruction of the Prince Mine branch between Prince Mine, Nev., and Pioche, and for the construction of additional trackage on this line and the construction of a yard at Caselton.

UNION PACIFIC.—This company's forces are making repairs and alterations to the Sixteenth street viaduct over its tracks and those of the Chicago, Burlington & Quincy in Omaha, Neb., at an estimated cost of \$35,000.

Railway Officers

EXECUTIVE

Carleton W. Meyer has been appointed assistant to president of the New York Central System, with headquarters at New York.

G. H. Burnette, assistant chief engineer of the Pittsburgh & Lake Erie, with headquarters at Pittsburgh, Pa., has been elected president of the Cambria & Indiana, with headquarters at Philadelphia, Pa.

FINANCIAL, LEGAL AND ACCOUNTING

Cyril G. Hughes, assistant paymaster on the Canadian National, with headquarters at Monton, N. B., has been appointed acting paymaster of the Atlantic region, with the same headquarters, succeeding **C. R. Blakney**, who has been granted a leave of absence for military service.

Henry J. Rohrbach, whose appointment as general claim agent of the Reading and the Central of New Jersey, at Philadelphia, Pa., was announced in the *Railway Age* of July 27, was born on June 21, 1895, at Philadelphia, Pa. Mr.



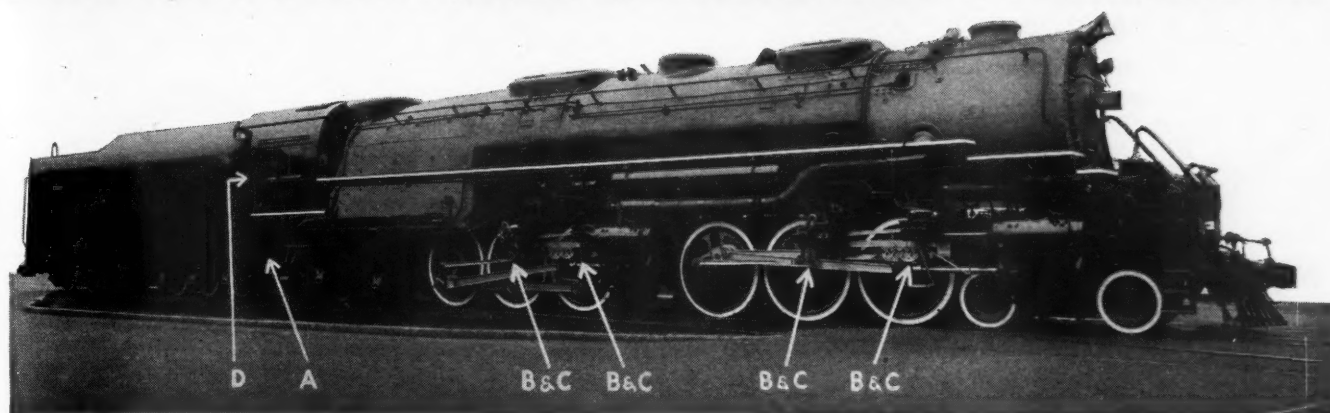
Henry J. Rohrbach

Rohrbach entered railroad service on January 19, 1914, as clerk in the freight claim department of the Reading. He was transferred to the general claim department on September 1, 1916, and served as clerk at various posts until August 1, 1924, when he was appointed chief clerk. On January 1, 1927, he was appointed chief clerk and claims adjuster, on July 1, 1934, becoming assistant to claims attorney, in which capacity he served until his recent appointment as general claim agent.

OPERATING

A. R. Brinkley has been appointed district superintendent of the Atlantic Coast Line, with headquarters at Norfolk, Va., succeeding **C. M. Cobb**, retired. Mr. Cobb was born at Mildred, N. C., on April 5, 1867, and entered the service of the At-

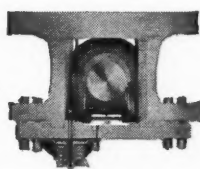
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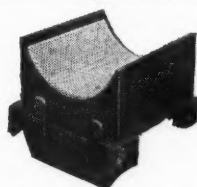
FRANKLIN ECONOMY DEVICES



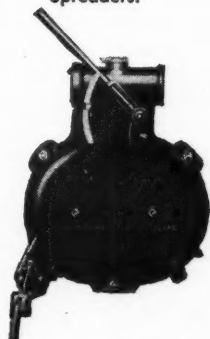
(A) E-2 Radial Buffers.



(B) Automatic Compensators & Snubbers.



(C) No. 8 Combined Lubricators & Spreaders.



(D) Butterfly Type Fire Doors.

ON THE 20 NEW *D&H* LOCOMOTIVES

The twenty new 4-6-6-4 type mallet locomotives recently delivered by the American Locomotive Company to the Delaware & Hudson R. R. are Franklin equipped.

(A) The E-2 Radial Buffer effectively dampens oscillation (between engine and tender) and assures smooth riding throughout the train.

(B) Its twin, the Automatic Compensator & Snubber assures a constant, accurate adjustment of the driving box wedges. This eliminates the possibility of pounding driving boxes and the resulting shocks to the locomotive.

(C) The No. 8 Combined Lubricator & Spreader is easily handled and assures proper lubrication of the driving box journals at all times.

(D) The Butterfly Type Fire Door saves coal, reduces maintenance and increases the safety of the engine crew.

On your new or old locomotive specify *Franklin* — Devices that make for economy.



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lantic Coast Line in June, 1893. He served successively as flagman, baggagemaster, conductor, general yardmaster and trainmaster until May, 1918, when he became superintendent of the Norfolk district, the position he held until his retirement on August 1.

E. W. Cameron has been appointed assistant superintendent of the Canadian National, with headquarters at London, Ont., and **J. B. Reeve** has been appointed assistant superintendent for the road at Hamilton, Ont.

W. E. Heimerdinger, district maintenance engineer of the Chicago, Rock Island & Pacific, with headquarters at Des Moines, Iowa, has been promoted to superintendent at Ft. Worth, Tex., effective August 1, to succeed **C. B. Pratt**, who is now on leave of absence and who will retire on September 1.

Mr. Heimerdinger was born in 1889 and entered the service of the Rock Island in 1911, as assistant on the engineering corps at Davenport, Iowa, following graduation from the University of Michigan. In the years which followed, he served as assistant and division engineer at Estherville, Iowa, Cedar Rapids and Des Moines, and in 1924-25 was engineer in charge of the construction of the new line from Trenton, Mo., to Kansas City. He was roadmaster at Haileyville, Okla., during 1935, and was made district maintenance engineer at Des Moines in 1937.

Mr. Pratt was born at Delavan, Ill., in 1873, and began his service with the Rock Island as chief clerk in the operating department at Little Rock, Ark., in 1902. Later he was transferred to Chicago, where he served as trainmaster, assistant to the general manager and as superintendent in 1912. In the years which followed, Mr. Pratt was stationed as superintendent on various divisions of the railroad.

W. H. Tobin, assistant vice-president of the Texas & Pacific, with headquarters at Dallas, Tex., has retired at his own request. **B. C. James**, supervisor of wages at Dallas, has been promoted to assistant vice-president, with the same headquarters. **R. C. Parker**, chief special agent at Dallas, has also been appointed assistant to the vice-president, with the same headquarters, to succeed **C. Percy**, retired. **A. E. Pistole**, superintendent at Big Spring, has been appointed special representative with headquarters at Dallas. **A. C. Ogg** and **G. R. French** have been appointed assistant superintendents at Big Springs, the former with territory from Ft. Worth to Big Spring Yard and the latter with territory from Big Spring to El Paso. Operating divisions have been reorganized into two, the Eastern including all lines east of Ft. Worth but excluding Ft. Worth and Lancaster terminals and the Western embracing all lines west of Ft. Worth and including Ft. Worth and Lancaster terminals. **J. G. Brannon**, superintendent at Alexandria, La., has been appointed superintendent of the Eastern division, with headquarters at Ft. Worth, and **L. L. Oliver**, superintendent at Ft. Worth, has been appointed superintendent of the Western division, with the same headquarters. **D. Handy** has been

appointed assistant superintendent, of all lines east of Alexandria, with headquarters at Alexandria. **T. E. Griswold** has been appointed assistant superintendent in charge of the territory from Texarkana to Mineola Yard and from Marshall to Alexandria, with headquarters at Marshall, Tex. **F. M. Conder** has been appointed assistant superintendent in charge of the territory from Ft. Worth to Mineola Yard, Ft. Worth to Texarkana via Whitesboro, and Texarkana to Shreveport via the T. S. & N., with headquarters at Ft. Worth. **J. H. Findley** has been appointed superintendent of dining cars, with headquarters at Ft. Worth, to succeed **S. D. Johnson**, retired.

Oscar Masse, superintendent of transportation of the Canadian National, with headquarters at Quebec, Que., has been appointed general superintendent of the Quebec district, with the same headquarters, succeeding **J. E. Morazain**, who has retired after more than half a century of railway service. A photograph of Mr. Masse and a biographical sketch of his railway career were published in the *Railway Age* of September 30, 1939. **J. E. Gauthier**, assistant superintendent of the Cochrane division, at Parent, Que., suc-



J. E. Gauthier

ceeds Mr. Masse as superintendent of transportation of the Quebec district. **J. E. Gibault**, superintendent of the Campbellton, N. B., division, has been appointed assistant general manager of the Atlantic region, with headquarters at Moncton, N. B.

E. W. Cameron, assistant superintendent at Hamilton, Ont., has been transferred to London, Ont. **J. B. Reeve** has been appointed assistant superintendent at Hamilton, Ont. **H. A. Pickering** has been appointed assistant superintendent of the Halifax, N. S., division, succeeding **E. P. Elliott**, who has retired on pension, effective August 1.

Mr. Morazain was born at Wheatland, Que., on July 31, 1875, and has spent all his time in railway service with the operating department, serving at many points in the Province of Quebec. During his more than 50 years of service he rose progressively from the position of clerk to that of general superintendent, holding the latter position at Quebec for nearly 22 years.

Mr. Gauthier was born at Portneuf,

Que., on September 3, 1898, and has served for more than 25 years in the operating department, holding various positions from



J. E. A. Gibault

clerk to that of assistant superintendent at various points throughout the province of Quebec. He was assistant superintendent of the Cochrane division at Parent, Que., at the time of his recent appointment as superintendent of transportation at Quebec.

Mr. Gibault was born in 1887 at St. Jerome and has been in railway service for 31 years, most of which time was spent in the province of Quebec. He was educated at Mount St. Louis in Montreal and was graduated from the Polytechnical school with the degrees of Civil Engineer and Bachelor of Applied Science in 1910. Entering railway service, Mr. Gibault had charge of construction work between Armstrong, B. C., and Cochrane, Ont., on the Transcontinental (now part of the Canadian National), and later became divisional engineer successively at Cochrane, St. Maurice, Que., and Levis. In 1923, Mr. Gibault was appointed to the Bureau of Economics in a technical capacity. From 1925 to 1927 he was in charge of the railway course at the Polytechnical school at Montreal. He was appointed superintendent of the Levis, Que., division in October, 1927, and served as superintendent of the Campbellton, N. B., division from 1932 until his recent appointment as assistant general manager of the Atlantic region of the company, with headquarters at Moncton, N. B.

TRAFFIC

W. H. Francis, general freight agent of the Southern Pacific at Portland, Ore., has been transferred to El Paso, Tex., and has been succeeded by **M. W. Ehmke**.

H. M. West, assistant general freight and passenger agent of the Union Pacific, with headquarters at Seattle, Wash., has been promoted to assistant traffic manager, with the same headquarters.

J. M. Hrebec, special traffic representative on the Missouri Pacific at St. Louis, Mo., has been promoted to general agent at Chicago, succeeding **L. F. Binkley** who has been promoted to assistant general freight agent at Omaha, Neb. Mr. Binkley relieves **M. P. Eckman**, who has



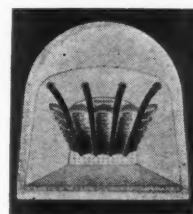
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been appointed general agent at Los Angeles, Cal., replacing **J. D. Yates**, whose death at Los Angeles on July 5 was announced in the *Railway Age* of July 27.

J. W. Hailey, division freight agent of the Missouri Pacific, with headquarters at New Orleans, La., has been promoted to assistant general freight agent with the same headquarters to succeed **O. C. Olsen**, who has been granted a leave of absence.

M. G. Van Brocklin has been appointed assistant general freight agent of the Denver & Rio Grande Western, with headquarters at Denver, Colo. **C. A. Brennan** has been appointed assistant general freight agent, with headquarters at Chicago.

G. A. Rodriguez, foreign freight agent on the Missouri Pacific at St. Louis, Mo., has been promoted to foreign freight traffic manager, with the same headquarters, succeeding **A. W. Aylin**, who has been advanced to the newly-created position of assistant traffic manager, with headquarters at New Orleans, La.

ENGINEERING AND SIGNALING

Luis Reyna, engineer maintenance of way of the National Railways of Mexico, has been promoted to chief engineer, with headquarters at Mexico City, D. F.

Judson Zimmer, general superintendent and chief engineer of the Fonda, Johnstown & Gloversville, with headquarters at Gloversville, N. Y., has been appointed trustee of the company, to succeed the late **J. Ledlie Hees**.

M. A. Baird, superintendent of telegraph and signals of the Erie, with headquarters at Cleveland, Ohio, retired on August 1 after 53 years' continuous service with this railroad, and the position of superintendent of telegraph and signals has been abolished. **W. S. Storms**, assistant superintendent of signals, has been appointed signal engineer, with headquarters at Cleveland, and the position of assistant superintendent of signals has been abolished. **F. H. Menagh**, assistant superin-



W. S. Storms

tendent of telegraph, has been appointed superintendent of telegraph and telephone, with headquarters at Cleveland, and the

position of assistant superintendent of telegraph has been abolished.

Mr. Baird was born on July 15, 1870, in Cuddebackville, N. Y., and entered railway service on January 19, 1887, as a laborer on the Erie at Middletown, N. Y. In May, 1891, he became a signal blacksmith; in May, 1894, signal gang foreman; in October, 1897, signal maintainer; in September, 1899, signal supervisor; in October, 1901, signal inspector; in March, 1909, signal supervisor; in September, 1911, general signal inspector; and in October, 1915, chief signal inspector. In May, 1917, he was appointed signal engineer, and held this position until November, 1933, when he was appointed superintendent of telegraph and signals following the consolidation of the signal and telegraph departments on this road, which position he held until his recent retirement.

Mr. Storms was born on November 24, 1891, at Paterson, N. J., and entered railway service in 1909, as a signal helper on the New York division of the Erie. In January, 1910, he became a signal fitter; in June, 1911, assistant signal maintainer; in September, 1911, signal maintainer; in September, 1912, maintenance foreman; in July, 1913, signal supervisor; in June, 1916, general signal inspector; and in May, 1917,



F. H. Menagh

chief signal inspector. On March 1, 1920, he was appointed assistant signal engineer, and held this position until November, 1933, when he was appointed assistant superintendent of signals following the consolidation of the signal and telegraph departments, which position he held until his recent appointment.

Mr. Menagh was born December 11, 1890, at Jersey City, N. J., and attended grade schools until 1903, and, later, took academic and technical work in evening and extension schools. He entered railway service in June, 1913, as a telephone installer on the Erie at Jersey City, N. J. From March, 1915, to May, 1915, he was a clerk in the Western Union Telegraph Company; from May, 1915, to October, 1915, wireless operator, with the Panama Steamship Company; from October, 1915, to September, 1916, installation foreman on the Erie; and from September, 1916, to May, 1917, wire chief on the Erie. In May, 1917, **Mr. Menagh** entered the United States Signal Corps of the Ameri-

can Expeditionary Forces and served until July, 1919, at which time he returned to the Erie as assistant to the superintendent of telegraph, which position he held until his recent appointment as superintendent of telegraph and telephone.

Raymond W. Troth, acting signal engineer of the St. Louis-San Francisco,



Raymond W. Troth

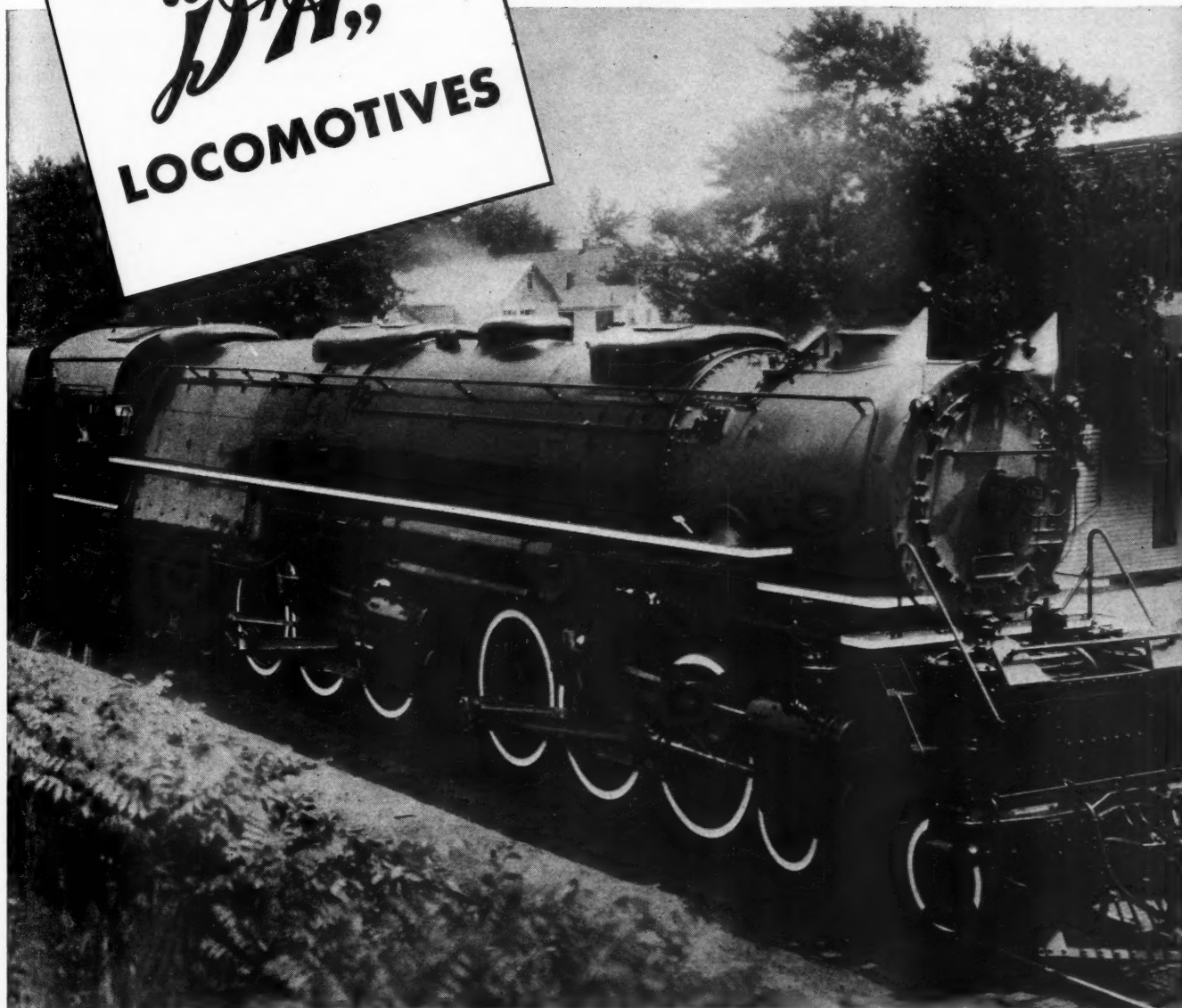
with headquarters at Springfield, Mo., has been promoted to signal engineer to succeed **I. A. Uhr**, retired. **Mr. Troth** was born on January 19, 1900, at Valley Falls, Kan. Following a public school education, **Mr. Troth** entered the service of the Atchison, Topeka & Santa Fe at Valley Falls as station helper on August 1, 1919. He was appointed operator at Emporia, Kan., on October 1, 1919, and served in this capacity until April 24, 1922, when he entered the signal department as a helper. On August 1, 1923, **Mr. Troth** entered the office of the signal engineer, Eastern Lines, as draftsman and served as draftsman, signalman on construction, and supervisor of materials until June 15, 1927, when he resigned to enter the signal department of the St. Louis-San Francisco as a draftsman. He was promoted to chief draftsman in March, 1928, to office engineer in April, 1929, and to signal inspector on October 16, 1936. Since the illness of **Mr. Uhr**, **Mr. Troth** has been serving as acting signal engineer.

Mr. Uhr was born at Atlanta, Ill., on July 5, 1883. After receiving a high school education in his native town he engaged in telephone work with a local telephone company, and in that connection he was employed for several years in various capacities. From March, 1904, until October of the following year he was in the service of the Kinlock Telephone Company at St. Louis, Mo. On the latter date he became foreman of a line gang for the Union Switch & Signal Company, in connection with the installation of signals on the New York Central Lines (then the Lake Shore & Michigan Southern) between Cleveland and Chicago, and in July, 1907, he was transferred to mechanical work at an interlocking plant in the vicinity of Terre Haute, Ind., and later became assistant foreman in connection with the installation of an all-electric interlocking plant at Indianapolis, Ind. From August, 1908, to

Continued on next left-hand page

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May, 1909, he was engaged in construction work as a wireman on the Galveston, Harrisburg & San Antonio. In May, 1909, he returned to the construction forces of the Union Switch & Signal Company and was engaged as foreman in the installation of automatic block signals on the St. Louis-San Francisco. In February of the following year he was appointed supervisor of signals on the Ozark division of that road, and in March, 1914, he became inspector of electric signals for the entire system with headquarters at Springfield, which position he held until his promotion to signal engineer in November, 1919.

MECHANICAL

H. S. Kelin has been appointed mechanical engineer of the Union Railroad, with headquarters at East Pittsburgh, Pa.

F. R. Denney, master mechanic of the Texas & Pacific, with headquarters at Shreveport, La., has been promoted to assistant mechanical superintendent, with headquarters at Dallas, Tex. **H. C. Vinsant**, master mechanic at Ft. Worth, has been transferred to Marshall, and has been succeeded by **J. E. Friend**, master mechanic at Big Spring. **William Schmalzried**, superintendent of the car department at Dallas, has retired at his own request and has been succeeded by **D. W. Akins**, general car inspector at Dallas, who in turn has been succeeded by **J. D. Clyde**, general foreman of the locomotive department at Ft. Worth.

Harry Rees, district master mechanic of the Baltimore & Ohio, with headquarters at Cincinnati, Ohio, has been promoted to superintendent of motive power for the western lines with the same headquarters, and has been succeeded by **H. J. Burkley**, master mechanic at Cincinnati, who in turn has been succeeded by **F. L. Hall**, superintendent of shops at Ivorydale, Ohio. **H. L. Geidenberger**, division foreman at Washington, Ind., succeeds Mr. Hall. **C. H. Spence**, district motive power inspector at Baltimore, Md., has been promoted to master mechanic at Du Bois, Pa.

Mr. Rees was born on September 30, 1885, and entered B. & O. service as a machinist at New Castle, Pa., on September 4, 1913. He became foreman on September 1, 1917, assistant master mechanic, on November 16, 1917, and general foreman on March 15, 1919, at the same point. In the same capacity he moved to Garrett, Ind., on May 1, 1920, and to New Castle Junction, Pa., in the same position, on July 1, 1926. On April 15, 1927, he became master mechanic at Akron, Ohio, and was promoted to division master mechanic at the same point on February 1, 1932. On December 1, 1936, Mr. Rees was appointed district master mechanic at Cincinnati.

PURCHASES AND STORES

Frank Stearns Austin, assistant purchasing agent of the New York Central, has been promoted to purchasing agent, with headquarters as before at New York, succeeding **Charles C. Warne**, whose death on July 6 was reported in the *Railway Age* of July 13. Mr. Austin was born

at Lynn, Mass., on November 6, 1886, and was educated at Dartmouth College and Thayer School of Civil Engineering



Bachrach

Frank Stearns Austin

(1909). Mr. Austin entered railroad service on May 31, 1909, as chairman on the Boston & Albany (New York Central R. R. lessee), serving until 1910 as rodman, transitman and in charge of party surveys. From 1910 to 1913 he was assistant supervisor of track at Pittsfield and Springfield, Mass.; from 1913 to 1917, supervisor of track at Worcester and Boston, Mass.; and from 1917 to 1927, general storekeeper at West Springfield, Mass., all with the Boston & Albany. Mr. Austin served as purchasing agent of the Boston & Albany at Boston from 1927 to 1935 and was assistant purchasing agent of the New York Central from the latter date until his recent promotion to purchasing agent.

SPECIAL

Matt W. Connelly has been appointed publicity director of the Kansas City Southern and the Louisiana & Arkansas, with headquarters at Shreveport, La. He will have supervision over all matters pertaining to advertising and publicity.

Eugene Du Bois, who has served for the past year as publicity representative of the Long Island, has been appointed



Eugene Du Bois

publicity representative for the New York zone of the Pennsylvania. In his new post he will handle public relations for the New

York division of the Pennsylvania as well as for the Long Island, with headquarters at Pennsylvania Station, New York. Mr. Du Bois, who was born in New York City in 1911, attended Milton Academy, in Milton, Mass., and graduated from Harvard College, Cambridge, Mass., in 1933. Before entering the service of the Long Island in June, 1939, he had been financial editor on the staff of the Brooklyn Eagle, at Brooklyn, New York. While with the Brooklyn Eagle Mr. Du Bois served in various departments, including the financial, magazine, editorial, and World's Fair. In 1936 and 1937 he spent five months touring South and Central America as a special correspondent for the Eagle and covered the visit to Buenos Aires of President Roosevelt during the Inter-American Peace Conference. In July and August, 1937, he took a two months' leave of absence from the Eagle to return to Chile as the manager of the United States Ski Team in the first Pan American Ski Championships, later writing a book about the trip—"Skis and Andes." Mr. Du Bois holds the commission of Ensign in the U. S. Naval Reserve.

OBITUARY

O. L. Lindrew, who retired as fuel conservation engineer of the Illinois Central on October 1, 1931, died on July 29, 1940, at Pinckneyville, Ill.

B. E. Haley, who retired as general roadmaster of the Atlantic Coast Line, with headquarters at Lakeland, Fla., on March 31, 1939, died on July 30 at Clearwater, Fla., after having been critically ill for three months. He was president of the Roadmasters and Maintenance of Way Association of America in 1936-37.

J. Ledlie Hees, trustee of the Fonda, Johnstown & Gloversville at Gloversville, N. Y., who died on June 28, was president of the road from 1897 to 1933, when he was appointed trustee. His first position was with the National Mohawk River Bank of Fonda, of which he later became president. He was the first president of the Adirondack Power & Light Corp. From 1894 to 1899 he served as deputy state treasurer of New York.

Henry J. Roth, who retired as superintendent of the Springfield division of the Illinois Central at Clinton, Ill., on March 31, 1939, died in Avalon, Cal., on August 5. He was born at Fairfield, Iowa, on October 21, 1870, and entered railway service as a telegraph operator on the Union Pacific in 1886, later serving consecutively as station agent, dispatcher, trainmaster and assistant superintendent. In 1890, he went with the Northern Pacific as a train dispatcher and two years later he returned to the Union Pacific as a trainmaster, later being promoted to assistant superintendent. In 1912, he entered the employ of the Illinois Central as an inspector of transportation and was later promoted to trainmaster with headquarters at Carbondale, Ill. Mr. Roth was advanced to superintendent, with headquarters at Mattoon, Ill., in the spring of 1917. He was later transferred to Carbondale, Ill., and Clinton, Ill., and retired on March 31, 1939.

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Our Steam Railroads—The Railroad Track—The Steam Locomotive—Electric Locomotives; Gasoline and Oil Motors—Freight Cars—Passenger Train Cars—Tomorrow's Trains Become Today's—Streamlined from Coast to Coast—Passenger Stations and Terminals—Freight Terminals—The Operation of Trains.

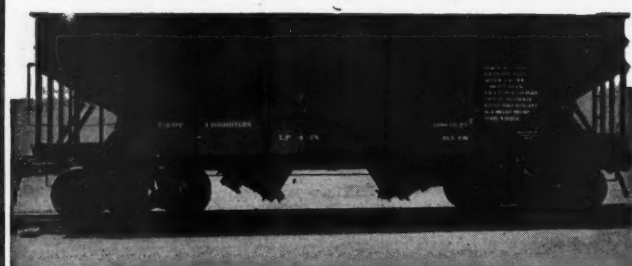
Freight Operating Statistics of Large Steam Railways—Selected Items for the Month of May.

| Region, road, and year | Miles of road operated | Train-miles | Locomotive-miles | | Car-miles | | Ton-miles (thousands) | | Number of road locomotives on line | | | | | |
|--|------------------------|-------------|----------------------|-----------|--------------------|-----------------|--|------------------------------|------------------------------------|--------|----------------|-------------------------|------|--|
| | | | Principal and helper | Light | Loaded (thousands) | Per cent loaded | Gross, excluding locomotives and tenders | Net, revenue and non-revenue | Serviceable | | Un-serviceable | Per cent un-serviceable | | |
| | | | | | | | | | Not stored | Stored | | | | |
| New England Region: | | | | | | | | | | | | | | |
| Boston & Albany | 1940 | 362 | 136,033 | 140,989 | 9,625 | 3,043 | 64.6 | 177,906 | 63,933 | 51 | 3 | 32 | 37.2 | |
| 1939 | | 374 | 125,954 | 131,428 | 10,712 | 2,853 | 63.4 | 166,256 | 57,812 | 56 | 5 | 27 | 30.7 | |
| Boston & Maine | 1940 | 1,892 | 280,620 | 317,975 | 25,201 | 9,986 | 67.7 | 570,216 | 212,037 | 120 | | 55 | 31.4 | |
| 1939 | | 1,916 | 262,436 | 292,946 | 23,494 | 9,421 | 68.4 | 532,111 | 200,623 | 127 | 5 | 80 | 37.7 | |
| N. Y., New Hav. & Hartf. | 1940 | 1,841 | 338,974 | 421,138 | 27,880 | 12,068 | 64.7 | 678,578 | 248,172 | 179 | 17 | 58 | 24.0 | |
| 1939 | | 1,854 | 337,847 | 425,541 | 27,741 | 11,886 | 64.6 | 662,078 | 236,963 | 176 | 2 | 85 | 35.3 | |
| Great Lakes Region: | | | | | | | | | | | | | | |
| Delaware & Hudson | 1940 | 846 | 245,657 | 331,353 | 33,886 | 8,519 | 62.9 | 546,446 | 258,000 | 126 | 43 | 72 | 29.9 | |
| 1939 | | 830 | 221,973 | 286,996 | 28,197 | 7,429 | 63.0 | 468,144 | 218,017 | 115 | 52 | 84 | 33.5 | |
| Del., Lack. & Western | 1940 | 983 | 359,717 | 405,274 | 54,177 | 13,037 | 66.4 | 779,449 | 309,357 | 142 | 7 | 57 | 27.7 | |
| 1939 | | 983 | 354,422 | 395,826 | 56,567 | 12,161 | 65.5 | 730,745 | 288,833 | 131 | 2 | 77 | 36.7 | |
| Erie (incl. Chi. & Erie) | 1940 | 2,268 | 641,027 | 674,946 | 40,118 | 28,394 | 65.9 | 1,716,150 | 650,769 | 201 | 42 | 186 | 43.4 | |
| 1939 | | 2,290 | 601,127 | 635,103 | 40,912 | 25,905 | 65.3 | 1,563,608 | 580,520 | 190 | 48 | 233 | 49.5 | |
| Grand Trunk Western | 1940 | 1,023 | 246,041 | 247,584 | 1,393 | 7,281 | 61.4 | 451,296 | 156,566 | 72 | 4 | 25 | 24.8 | |
| 1939 | | 1,023 | 221,163 | 221,956 | 1,404 | 6,041 | 60.6 | 369,375 | 117,512 | 64 | 4 | 35 | 34.0 | |
| Lehigh Valley | 1940 | 1,260 | 333,200 | 367,198 | 51,892 | 12,911 | 64.9 | 817,545 | 341,910 | 139 | .. | 92 | 39.8 | |
| 1939 | | 1,266 | 312,985 | 346,480 | 48,578 | 12,271 | 62.6 | 788,801 | 326,480 | 115 | .. | 110 | 48.9 | |
| New York Central | 1940 | 10,565 | 2,674,726 | 2,838,674 | 174,290 | 90,159 | 58.7 | 6,181,477 | 2,548,687 | 868 | 159 | 339 | 24.8 | |
| 1939 | | 10,613 | 2,276,676 | 2,376,515 | 116,562 | 73,386 | 59.0 | 4,830,153 | 1,859,344 | 738 | 229 | 463 | 32.4 | |
| N. Y., Chicago & St. Louis .. | 1940 | 1,672 | 509,912 | 516,552 | 6,447 | 18,111 | 62.3 | 1,103,758 | 393,129 | 160 | 15 | 23 | 11.6 | |
| 1939 | | 1,672 | 455,177 | 461,515 | 5,698 | 16,351 | 63.3 | 973,280 | 334,197 | 145 | 11 | 42 | 21.2 | |
| Pere Marquette | 1940 | 2,080 | 362,651 | 369,204 | 7,350 | 9,619 | 59.3 | 625,428 | 222,537 | 114 | 2 | 41 | 26.1 | |
| 1939 | | 2,081 | 324,693 | 329,752 | 5,453 | 8,034 | 59.8 | 518,708 | 184,782 | 108 | 7 | 48 | 29.4 | |
| Pittsburgh & Lake Erie | 1940 | 233 | 76,966 | 79,393 | 20 | 3,181 | 61.2 | 278,290 | 160,404 | 33 | 19 | 17 | 24.6 | |
| 1939 | | 233 | 44,742 | 46,041 | 32 | 1,792 | 63.3 | 140,804 | 76,480 | 27 | 11 | 36 | 48.6 | |
| Wabash | 1940 | 2,397 | 547,611 | 557,476 | 12,044 | 17,280 | 62.9 | 1,037,524 | 350,058 | 138 | 17 | 113 | 42.2 | |
| 1939 | | 2,397 | 537,419 | 546,913 | 11,510 | 16,787 | 63.0 | 1,001,967 | 330,226 | 134 | 6 | 134 | 48.9 | |
| Central Eastern Region: | | | | | | | | | | | | | | |
| Baltimore & Ohio | 1940 | 6,261 | 1,514,915 | 1,884,482 | 201,957 | 48,789 | 61.6 | 3,416,117 | 1,547,432 | 662 | 108 | 431 | 35.9 | |
| 1939 | | 6,278 | 1,248,655 | 1,532,978 | 163,238 | 38,729 | 63.6 | 2,537,496 | 1,080,416 | 591 | 135 | 489 | 40.2 | |
| Central of New Jersey | 1940 | 679 | 166,729 | 188,575 | 33,786 | 5,277 | 60.6 | 368,898 | 173,314 | 75 | 7 | 72 | 46.8 | |
| 1939 | | 680 | 152,729 | 173,000 | 34,097 | 4,745 | 60.1 | 328,222 | 151,220 | 72 | .. | 84 | 53.8 | |
| Chicago & Eastern Illinois .. | 1940 | 925 | 169,900 | 170,115 | 3,052 | 4,172 | 64.1 | 255,549 | 101,690 | 55 | 4 | 31 | 34.4 | |
| 1939 | | 927 | 159,422 | 159,556 | 2,897 | 3,977 | 66.9 | 233,534 | 91,616 | 52 | 4 | 38 | 40.4 | |
| Elgin, Joliet & Eastern | 1940 | 390 | 93,514 | 94,851 | 1,119 | 2,315 | 59.1 | 175,503 | 83,748 | 47 | 1 | 29 | 37.7 | |
| 1939 | | 390 | 86,603 | 87,844 | 1,227 | 2,072 | 58.9 | 152,170 | 69,558 | 50 | 7 | 26 | 31.3 | |
| Long Island | 1940 | 375 | 26,143 | 27,352 | 17,172 | 278 | 51.2 | 21,394 | 8,241 | 32 | 7 | 9 | 18.8 | |
| 1939 | | 379 | 27,960 | 28,964 | 17,802 | 297 | 51.5 | 23,083 | 9,172 | 33 | 3 | 12 | 25.0 | |
| Pennsylvania System | 1940 | 9,983 | 2,908,783 | 3,538,345 | 408,487 | 112,075 | 60.3 | 7,839,940 | 3,448,218 | 1,230 | 248 | 758 | 33.9 | |
| 1939 | | 9,998 | 2,446,648 | 2,962,859 | 366,038 | 91,112 | 60.8 | 6,042,105 | 2,477,007 | 1,096 | 89 | 1,090 | 47.9 | |
| Reading | 1940 | 1,442 | 403,686 | 446,874 | 51,293 | 11,983 | 61.4 | 863,121 | 412,648 | 209 | 15 | 150 | 40.1 | |
| 1939 | | 1,443 | 368,560 | 409,536 | 50,726 | 10,347 | 62.1 | 728,511 | 342,576 | 178 | 8 | 175 | 48.5 | |
| Pocahontas Region: | | | | | | | | | | | | | | |
| Chesapeake & Ohio | 1940 | 3,044 | 932,099 | 985,676 | 45,182 | 44,019 | 55.6 | 3,761,879 | 2,052,393 | 384 | 46 | 85 | 16.5 | |
| 1939 | | 3,055 | 629,896 | 655,733 | 23,864 | 23,805 | 58.7 | 1,841,886 | 950,065 | 335 | 59 | 141 | 26.4 | |
| Norfolk & Western | 1940 | 2,169 | 659,878 | 688,771 | 36,754 | 30,271 | 56.8 | 2,579,271 | 1,368,700 | 278 | 46 | 32 | 9.0 | |
| 1939 | | 2,169 | 479,933 | 499,272 | 27,666 | 17,882 | 58.9 | 1,367,999 | 663,407 | 255 | 73 | 33 | 9.1 | |
| Southern Region: | | | | | | | | | | | | | | |
| Atlantic Coast Line | 1940 | 5,075 | 678,188 | 683,528 | 10,051 | 14,864 | 60.2 | 906,850 | 308,936 | 264 | 22 | 42 | 12.8 | |
| 1939 | | 5,081 | 703,402 | 712,959 | 9,524 | 14,698 | 61.1 | 852,818 | 279,527 | 265 | 13 | 104 | 27.2 | |
| Central of Georgia | 1940 | 1,831 | 274,381 | 276,278 | 4,309 | 5,928 | 70.6 | 340,854 | 134,133 | 94 | .. | 26 | 21.7 | |
| 1939 | | 1,838 | 252,744 | 256,192 | 3,377 | 5,366 | 73.2 | 293,391 | 113,374 | 95 | .. | 24 | 20.2 | |
| Illinois Central (incl. Y. & M. V.) .. | 1940 | 6,557 | 1,303,459 | 1,308,769 | 24,647 | 37,082 | 60.5 | 2,404,388 | 957,183 | 568 | 65 | 177 | 21.9 | |
| 1939 | | 6,537 | 1,299,270 | 1,310,764 | 24,941 | 34,933 | 60.2 | 2,228,566 | 849,570 | 524 | 65 | 269 | 31.4 | |
| Louisville & Nashville | 1940 | 4,862 | 1,221,256 | 1,324,357 | 33,865 | 31,174 | 59.1 | 2,234,535 | 1,023,468 | 372 | 24 | 97 | 19.7 | |
| 1939 | | 4,899 | 1,026,369 | 1,081,531 | 22,929 | 22,579 | 62.4 | 1,435,307 | 574,706 | 323 | 13 | 204 | 37.8 | |
| Seaboard Air Line | 1940 | 4,301 | 614,850 | 641,544 | 4,918 | 15,276 | 61.9 | 937,936 | 331,855 | 241 | 22 | 42 | 13.8 | |
| 1939 | | 4,305 | 566,058 | 588,437 | 4,056 | 13,829 | 62.8 | 823,880 | 279,329 | 239 | 12 | 51 | 16.9 | |
| Southern | 1940 | 6,548 | 1,400,484 | 1,421,888 | 21,040 | 31,537 | 65.5 | 1,868,601 | 746,620 | 488 | .. | 152 | 23.8 | |
| 1939 | | 6,626 | 1,222,648 | 1,238,005 | 17,223 | 27,424 | 64.8 | 1,586,659 | 599,957 | 483 | 4 | 178 | 26.8 | |
| Northwestern Region: | | | | | | | | | | | | | | |
| Chicago & North Western .. | 1940 | 8,324 | 801,409 | 829,383 | 15,934 | 24,592 | 62.6 | 1,562,719 | 577,912 | 278 | 76 | 259 | 42.3 | |
| 1939 | | 8,366 | 785,927 | 806,373 | 17,983 | 22,630 | 65.2 | 1,390,602 | 513,973 | 300 | 93 | 271 | 40.8 | |
| Chicago Great Western | 1940 | 1,447 | 245,683 | 246,795 | 6,458 | 7,227 | 63.7 | 444,983 | 161,117 | 66 | 2 | 17 | 20.0 | |
| 1939 | | 1,450 | 243,439 | 243,631 | 6,171 | 6,863 | 61.9 | 425,073 | 148,152 | 65 | 5 | 20 | 22.2 | |
| Chi., Milw., St. P. & Pac. | 1940 | 10,874 | 1,176,286 | 1,224,816 | 46,311 | 34,924 | 62.7 | 2,241,354 | 911,808 | 396 | 92 | 117 | 19.3 | |
| 1939 | | 10,934 | 1,164,746 | 1,196,622 | 40,394 | 32,236 | 62.5 | 2,046,813 | 810,972 | 381 | 100 | 167 | 25.8 | |
| Chi., St. P., Minneap. & Om. | 1940 | 1,619 | 201,372 | 209,492 | 9,771 | 4,788 | 64.9 | 295,746 | 113,495 | 89 | 30 | 18 | 13.1 | |
| 1939 | | 1,619 | 200,530 | 208,610 | 9,819 | 4,663 | 65.1 | 288,549 | 111,834 | 94 | 26 | 21 | 14.9 | |
| Great Northern | 1940 | 7,973 | 826,709 | 822,609 | 25,517 | 29,363 | 59.3 | 2,151,245 | 968,410 | 311 | 70 | 150 | 28.2 | |
| 1939 | | 7,976 | 754,856 | 747,276 | 27,926 | 25,984 | 60.3 | 1,820,849 | 781,872 | 335 | 52 | 158 | 29.0 | |
| Minneap., St. P. & S. St. M. | 1940 | 4,261 | 387,938 | 391,177 | 3,420 | 9,370 | 62.7 | 582,401 | 241,444 | 113 | .. | 24 | 17.5 | |
| 1939 | | 4,266 | 365,855 | 369,035 | 2,027 | 8,262 | 64.3 | 491,200 | 195,584 | 112 | .. | 34 | 23.3 | |
| Northern Pacific | 1940 | 6,423 | 693,562 | 734,993 | 42,973 | 23,904 | 65.1 | 1,501,612 | 627,150 | 295 | 55 | 95 | 21.3 | |
| 1939 | | 6,424 | 657,394 | 691,754 | 33,981 | 21,709 | 64.9 | 1,368,596 | 576,608 | 336 | 18 | 90 | 20.3 | |
| Central Western Region: | | | | | | | | | | | | | | |
| Alton | 1940 | 914 | 193,070 | 201,552 | 1,051 | 4,015 | 61.0 | 258,014 | 98,835 | 55 | 12 | 16 | 19.3 | |
| 1939 | | 914 | 190,341 | 201,255 | 1,358 | 4,187 | 60.5 | 274,177 | 104,795 | 51 | 20 | 18 | 20.2 | |
| Atch., Top. & S. Fe (incl. | 1940 | 13,414 | 1,967,900 | 2,130,235 | 103,394 | 55,980 | 59.4 | 3,705,970 | 1,168,741 | 595 | 71 | 175 | 20.8 | |
| 1939 | | 13,466 | 1,691,333 | 1,803,649 | 79,083 | 47,476 | 61.8 | 3,021,555 | 989,272 | 559 | 98 | 236 | 26.4 | |
| Chicago, Burl. & Quincy | 1940 | 8,924 | 1,023,436 | 1,041,823 | 32,964 | 30,6 | | | | | | | | |

1940, Compared with May, 1939, for Roads with Annual Operating Revenues Above \$25,000,000

| Region, road, and year | Number of freight cars on line | | | Per cent un-serviceable | Gross ton-miles per train-hour, excluding locomotives and tenders | | Net ton-miles per train-mile | Net ton-miles per loaded car-mile | Net ton-miles per car-day | Car-miles per car-day | Net ton-miles per mile of road per day | Pounds of coal per 1,000 gross ton-miles, including locomotives and tenders | Locomotive-miles per locomotive-day | |
|---|--------------------------------|---------|--------|-------------------------|---|---|------------------------------|-----------------------------------|---------------------------|-----------------------|--|---|-------------------------------------|-------|
| | Home | Foreign | Total | | Gross ton-miles per train-hour, excluding locomotives and tenders | Gross ton-miles per train-mile, excluding locomotives and tenders | | | | | | | | |
| New England Region: | | | | | | | | | | | | | | |
| Boston & Albany | 1940 | 923 | 4,591 | 5,514 | 2.1 | 21,614 | 1,313 | 472 | 21.0 | 388 | 28.6 | 5,697 | 147 | 61.8 |
| 1939 | | 1,131 | 3,893 | 5,024 | 2.8 | 20,803 | 1,325 | 461 | 20.3 | 373 | 29.0 | 4,986 | 158 | 55.5 |
| Boston & Maine | 1940 | 5,274 | 7,008 | 12,282 | 6.0 | 28,812 | 2,038 | 758 | 21.2 | 558 | 38.8 | 3,615 | 93 | 68.3 |
| 1939 | | 6,602 | 7,729 | 14,331 | 6.8 | 28,286 | 2,035 | 767 | 21.3 | 456 | 31.3 | 3,378 | 95 | 51.6 |
| N. Y., New Hav. & Hartf. | 1940 | 7,073 | 10,846 | 17,919 | 3.7 | 29,723 | 2,032 | 743 | 20.6 | 435 | 32.7 | 4,348 | 99 | 63.6 |
| 1939 | | 8,007 | 10,690 | 18,697 | 8.2 | 29,139 | 1,988 | 712 | 19.9 | 403 | 31.3 | 4,123 | 98 | 60.5 |
| Great Lakes Region: | | | | | | | | | | | | | | |
| Delaware & Hudson | 1940 | 8,654 | 3,463 | 12,117 | 3.6 | 34,206 | 2,237 | 1,056 | 30.3 | 709 | 37.2 | 9,838 | 108 | 51.7 |
| 1939 | | 8,050 | 3,703 | 11,753 | 4.7 | 32,095 | 2,121 | 988 | 29.3 | 635 | 34.3 | 8,473 | 112 | 42.6 |
| Del., Lack. & Western | 1940 | 11,327 | 5,860 | 17,187 | 6.8 | 38,330 | 2,191 | 869 | 23.7 | 590 | 37.5 | 10,152 | 122 | 76.0 |
| 1939 | | 13,154 | 5,863 | 19,017 | 14.5 | 37,114 | 2,095 | 828 | 23.8 | 493 | 31.7 | 9,478 | 126 | 72.6 |
| Erie (incl. Chi. & Erie) | 1940 | 15,983 | 13,234 | 29,217 | 3.3 | 45,970 | 2,696 | 1,022 | 22.9 | 725 | 48.0 | 9,256 | 91 | 59.8 |
| 1939 | | 17,465 | 9,881 | 27,346 | 6.2 | 44,414 | 2,622 | 974 | 22.4 | 674 | 46.1 | 8,177 | 101 | 51.3 |
| Grand Trunk Western | 1940 | 4,025 | 6,492 | 10,517 | 6.7 | 36,427 | 1,840 | 638 | 21.5 | 479 | 36.3 | 4,937 | 91 | 87.6 |
| 1939 | | 4,859 | 5,185 | 10,044 | 11.2 | 34,290 | 1,674 | 533 | 19.4 | 380 | 32.2 | 3,705 | 91 | 73.8 |
| Lehigh Valley | 1940 | 10,195 | 7,971 | 18,166 | 1.7 | 46,640 | 2,489 | 1,041 | 26.5 | 632 | 36.8 | 8,753 | 106 | 64.0 |
| 1939 | | 10,486 | 7,981 | 18,467 | 1.7 | 45,519 | 2,555 | 1,057 | 26.6 | 556 | 33.4 | 8,319 | 114 | 60.0 |
| New York Central | 1940 | 87,861 | 53,762 | 141,623 | 12.9 | 39,663 | 2,327 | 960 | 28.3 | 577 | 34.8 | 7,782 | 96 | 79.8 |
| 1939 | | 91,206 | 52,709 | 143,915 | 20.3 | 37,361 | 2,139 | 823 | 25.3 | 419 | 28.1 | 5,651 | 101 | 62.9 |
| N. Y., Chicago & St. Louis | 1940 | 6,572 | 7,482 | 14,054 | 3.8 | 41,041 | 2,169 | 772 | 21.7 | 902 | 66.6 | 7,585 | 87 | 91.5 |
| 1939 | | 6,713 | 6,134 | 12,847 | 5.5 | 40,880 | 2,143 | 736 | 20.4 | 802 | 61.9 | 6,448 | 86 | 81.8 |
| Pere Marquette | 1940 | 8,689 | 6,367 | 15,056 | 3.2 | 30,001 | 1,730 | 616 | 23.1 | 458 | 33.3 | 3,451 | 93 | 84.8 |
| 1939 | | 9,878 | 5,350 | 15,228 | 4.8 | 27,874 | 1,601 | 570 | 23.0 | 393 | 28.6 | 2,864 | 95 | 73.3 |
| Pittsburgh & Lake Erie | 1940 | 13,769 | 3,655 | 17,424 | 23.5 | 43,991 | 3,617 | 2,085 | 50.4 | 284 | 9.2 | 22,207 | 73 | 40.5 |
| 1939 | | 9,629 | 8,928 | 18,557 | 33.6 | 41,943 | 3,150 | 1,711 | 42.7 | 135 | 5.0 | 10,588 | 93 | 22.4 |
| Wabash | 1940 | 12,611 | 8,151 | 20,762 | 7.7 | 39,711 | 1,907 | 643 | 20.3 | 543 | 42.6 | 4,711 | 109 | 71.8 |
| 1939 | | 13,342 | 8,938 | 22,280 | 11.7 | 39,265 | 1,879 | 619 | 19.7 | 493 | 39.8 | 4,444 | 109 | 69.0 |
| Central Eastern Region: | | | | | | | | | | | | | | |
| Baltimore & Ohio | 1940 | 57,681 | 23,732 | 81,413 | 10.5 | 31,324 | 2,286 | 1,036 | 31.7 | 607 | 31.0 | 7,973 | 133 | 59.3 |
| 1939 | | 58,133 | 22,368 | 80,501 | 19.0 | 29,020 | 2,063 | 878 | 27.9 | 437 | 24.6 | 5,551 | 148 | 48.0 |
| Central of New Jersey | 1940 | 9,207 | 10,980 | 20,187 | 22.1 | 28,963 | 2,347 | 1,103 | 32.8 | 278 | 14.0 | 8,234 | 127 | 59.6 |
| 1939 | | 9,874 | 10,408 | 20,282 | 30.6 | 27,343 | 2,281 | 1,051 | 31.9 | 241 | 12.6 | 7,174 | 142 | 55.6 |
| Chicago & Eastern Illinois | 1940 | 3,362 | 2,950 | 6,312 | 7.1 | 29,036 | 1,507 | 600 | 24.4 | 519 | 33.2 | 3,546 | 131 | 65.3 |
| 1939 | | 3,350 | 2,970 | 6,320 | 4.4 | 27,798 | 1,469 | 576 | 23.0 | 462 | 30.0 | 3,188 | 124 | 59.0 |
| Elgin, Joliet & Eastern | 1940 | 9,088 | 4,391 | 13,479 | 3.1 | 18,000 | 1,923 | 918 | 36.2 | 212 | 9.9 | 6,927 | 116 | 56.0 |
| 1939 | | 8,564 | 2,527 | 11,091 | 5.4 | 16,801 | 1,816 | 830 | 33.6 | 198 | 10.0 | 5,753 | 116 | 48.7 |
| Long Island | 1940 | 139 | 2,906 | 3,045 | 1.0 | 5,931 | 832 | 321 | 29.6 | 79 | 5.2 | 709 | 297 | 43.0 |
| 1939 | | 288 | 3,347 | 3,635 | 4.6 | 6,074 | 854 | 339 | 30.9 | 83 | 5.2 | 781 | 354 | 46.6 |
| Pennsylvania System | 1940 | 194,240 | 60,674 | 254,914 | 15.8 | 39,730 | 2,746 | 1,208 | 30.8 | 435 | 23.4 | 11,142 | 104 | 63.0 |
| 1939 | | 201,748 | 46,163 | 247,911 | 23.5 | 38,669 | 2,512 | 1,030 | 27.2 | 322 | 19.5 | 7,992 | 117 | 51.8 |
| Reading | 1940 | 23,742 | 10,720 | 34,462 | 18.9 | 27,853 | 2,145 | 1,026 | 34.4 | 379 | 17.9 | 9,231 | 130 | 50.7 |
| 1939 | | 25,474 | 9,099 | 34,573 | 26.7 | 24,800 | 1,986 | 934 | 33.1 | 319 | 15.5 | 7,658 | 142 | 46.3 |
| Pocahontas Region: | | | | | | | | | | | | | | |
| Chesapeake & Ohio | 1940 | 46,685 | 14,375 | 61,060 | 2.3 | 59,439 | 4,085 | 2,229 | 46.6 | 1,090 | 42.1 | 21,750 | 68 | 71.6 |
| 1939 | | 48,718 | 9,407 | 58,125 | 4.9 | 46,392 | 2,951 | 1,522 | 39.9 | 509 | 21.7 | 10,032 | 79 | 45.4 |
| Norfolk & Western | 1940 | 37,480 | 4,736 | 42,216 | 4.3 | 60,355 | 3,956 | 2,099 | 45.2 | 1,061 | 41.3 | 20,356 | 84 | 71.8 |
| 1939 | | 42,424 | 4,198 | 46,622 | 4.4 | 46,036 | 2,879 | 1,396 | 37.1 | 444 | 20.3 | 9,866 | 100 | 51.4 |
| Southern Region: | | | | | | | | | | | | | | |
| Atlantic Coast Line | 1940 | 14,706 | 6,960 | 21,666 | 16.2 | 25,109 | 1,340 | 457 | 20.8 | 456 | 36.5 | 1,964 | 104 | 72.9 |
| 1939 | | 15,156 | 7,467 | 22,623 | 20.2 | 22,970 | 1,218 | 399 | 19.0 | 384 | 33.0 | 1,775 | 106 | 65.5 |
| Central of Georgia | 1940 | 4,861 | 2,323 | 7,184 | 2.5 | 25,076 | 1,254 | 494 | 22.6 | 587 | 36.7 | 2,363 | 117 | 81.9 |
| 1939 | | 5,081 | 3,158 | 8,239 | 2.0 | 22,991 | 1,164 | 450 | 21.1 | 463 | 29.9 | 1,990 | 117 | 75.5 |
| Illinois Central (incl. Y. & M. V.) | 1940 | 32,071 | 15,200 | 47,271 | 2.9 | 31,716 | 1,865 | 743 | 25.8 | 659 | 42.2 | 4,709 | 124 | 55.9 |
| 1939 | | 30,403 | 13,688 | 44,091 | 4.6 | 29,255 | 1,729 | 659 | 24.3 | 635 | 43.4 | 4,192 | 129 | 54.4 |
| Louisville & Nashville | 1940 | 37,047 | 10,430 | 47,477 | 11.6 | 29,836 | 1,834 | 840 | 32.8 | 702 | 36.2 | 6,790 | 118 | 94.4 |
| 1939 | | 42,926 | 9,402 | 52,328 | 20.0 | 23,739 | 1,404 | 562 | 25.5 | 355 | 22.3 | 3,784 | 135 | 69.1 |
| Seaboard Air Line | 1940 | 12,044 | 5,397 | 17,441 | 4.1 | 27,650 | 1,544 | 546 | 21.7 | 614 | 45.7 | 2,489 | 116 | 75.6 |
| 1939 | | 11,375 | 4,550 | 15,925 | 4.3 | 25,827 | 1,477 | 501 | 20.2 | 545 | 42.9 | 2,093 | 116 | 70.8 |
| Southern | 1940 | 22,957 | 18,118 | 41,075 | 7.3 | 23,965 | 1,343 | 536 | 23.7 | 582 | 37.5 | 3,678 | 133 | 76.1 |
| 1939 | | 23,526 | 16,465 | 39,991 | 10.6 | 23,495 | 1,304 | 493 | 21.9 | 482 | 34.0 | 2,921 | 135 | 63.9 |
| Northwestern Region: | | | | | | | | | | | | | | |
| Chicago & North Western | 1940 | 35,925 | 15,969 | 51,894 | 11.5 | 31,024 | 1,985 | 734 | 23.5 | 366 | 24.9 | 2,240 | 112 | 48.5 |
| 1939 | | 37,530 | 17,251 | 54,781 | 10.5 | 29,062 | 1,830 | 676 | 22.7 | 306 | 20.7 | 1,982 | 109 | 43.6 |
| Chicago Great Western | 1940 | 2,713 | 2,902 | 5,615 | 1.9 | 34,222 | 1,814 | 657 | 22.3 | 954 | 67.2 | 3,592 | 114 | 103.4 |
| 1939 | | 2,480 | 2,842 | 5,322 | 2.0 | 32,210 | 1,751 | 610 | 21.6 | 910 | 68.1 | 3,296 | 121 | 97.1 |
| Chi., Milw., St. P. & Pac. | 1940 | 45,196 | 15,517 | 60,713 | 2.9 | 32,104 | 1,913 | 778 | 26.1 | 487 | 29.8 | 2,705 | 114 | 71.1 |
| 1939 | | 45,435 | 15,123 | 60,558 | 2.7 | 29,236 | 1,764 | 695 | 25.2 | 434 | 27.6 | 2,393 | 115 | 66.7 |
| Chi., St. P., Minneap. & Om. | 1940 | 3,516 | 5,056 | 8,572 | 7.0 | 20,333 | 1,472 | 565 | 23.7 | 432 | 28.1 | 2,261 | 106 | 55.5 |
| 1939 | | 3,950 | 5,462 | 9,412 | 8.9 | 19,536 | 1,443 | 559 | 24.0 | 403 | 25.8 | 2,228 | 100 | 55.3 |
| Great Northern | 1940 | 34,197 | 8,982 | 43,179 | 6.6 | 41,133 | 2,614 | 1,177 | 33.0 | 724 | 37.0 | 3,918 | 92 | 55.7 |
| 1939 | | 37,073 | 8,698 | 45,771 | 8.7 | 36,349 | 2,424 | 1,041 | 30.1 | 551 | 30.4 | 3,162 | 102 | 50.5 |
| Minneap., St. P. & S. St. M. | 1940 | 12,494 | 3,392 | 15,886 | 4.2 | 26,027 | 1,503 | 623 | 25.8 | 494 | 30.6 | 1,828 | 95 | 94.6 |
| 1939 | | 12,946 | 3,326 | 16,272 | 7.0 | 22,627 | 1,344 | 535 | 23.7 | 391 | 25.7 | 1,479 | 97 | 83.3 |
| Northern Pacific | 1940 | 29,960 | 5,235 | 35,195 | 10.4 | 36,678 | 2,176 | 909 | 26.2 | 577 | 33.8 | 3,150 | 127 | 61.1 |
| 1939 | | 30,716 | 4,899 | 35,615 | 11.7 | 33,013 | 2,092 | 881 | 26.6 | 520 | 30.2 | 2,895 | 133 | 57.4 |
| Central Western Region: | | | | | | | | | | | | | | |
| Alton | 1940 | 1,560 | 5,191 | 6,751 | 5.6 | 36,427 | 1,341 | 514 | 24.6 | 467 | 31.2 | 3,488 | 128 | 83.6 |
| 1939 | | 1,761 | 5,785 | 7,546 | 12.8 | 35,187 | 1,458 | 557 | 25.0 | 446 | 29.5 | 3,699 | 122 | 76.7 |
| Atch., Top. & S. Fe. (incl. G. C. & S. F. & P. & S. F.) | 1940 | 74,616 | 11,098 | 85,714 | 10.5 | 38,803 | 1,887 | < | | | | | | |

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